

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

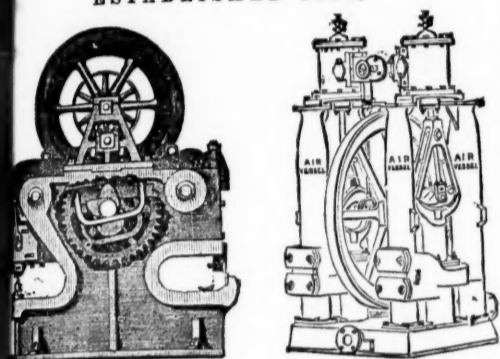
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2174.—VOL. XLVII.

LONDON, SATURDAY, APRIL 21, 1877.

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Ropes; Hauling Ropes; and Galvanised Signal Strand; Ship's Standing Rigging
and complete Patent Hemp and Manila Hawsers, Warps, Cordage, Spun-yarn,
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W. BENNETTS, having had many years experience as chief engineer with
Messrs. Bickford, Smith, and Co., is now enabled to offer Fuse of every variety of
known manufacture, of best quality, and at moderate prices.
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A DIPLOMA—HIGHEST OF ALL AWARDS—given by the
Geographical Congress, Paris, 1875—M. Favre, Contractor, having
exhibited the McKean Drill alone as the MODEL BORING MACHINE
for the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland
Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where
THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecu-
tive weeks, ending February 7, was 24'90, 27'60, 24'80, 26'10,
28'30, 27'10, 28'40, 28'70 metres. Total advance of south head-
ing during January was 121'30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tun-
nel, the McKean Rock Drill continued to work until the pres-
sure was reduced to one-half atmosphere (7½ lbs.), showing
almost the entire motive force to be available for the blow
against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these
Machines for the SEVERN TUNNEL; the LONDON AND
NORTH-WESTERN RAILWAY for the FESTINIOG TUN-
NEL; and the BRITISH GOVERNMENT for several Public
Works. A considerable number of Mining Companies are now
using them. Shafts and Galleries are driven at from three to
six times the speed of hand labour, according to the size and
number of machines employed, and with important saving in
cost. The ratio of advantage over hand labour is greatest
where the rock is hardest.

These Machines possess many advantages, which give them
a value unapproached by any other system of Boring Machine.

**THE MCKEAN ROCK DRILL IS ATTAINING GENERAL
USE THROUGHOUT THE WORLD FOR MINING, TUN-
NELLING, QUARRYING, AND SUB-MARINE BORING.**

The MCKEAN ROCK DRILLS are the most powerful—the
most portable—the most durable—the most compact—of the
best mechanical device. They contain the fewest parts—have
no weak parts—act without SHOCK upon any of the operat-
ing parts—work with a lower pressure than any other Rock
Drill—may be worked at a higher pressure than any other
—may be run with safety to FIFTEEN HUNDRED STROKES
PER MINUTE—do not require a mechanic to work them—are
the smallest, shortest, and lightest of all machines—will give
the longest feed without change of tool—work with long or
short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or
open work. Their working parts are best protected against
grit and accidents. The various methods of mounting them
are the most efficient.

N.B.—Correspondents should state particulars as to
character of work in hand in writing us for information,
on receipt of which a special definite answer, with
reference to our full illustrated catalogue, will be sent.

**PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL,
IRON, AND FLEXIBLE TUBING.**

The McKean Drill may be seen in operation daily in London.

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The Warsop Rock Drill

(Involving an entirely new principle in Mechanical Boring)

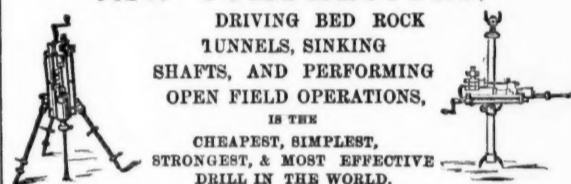
Requires only 20 lbs. steam or air-pressure.
Has only two moving parts—thus ensuring freedom from de-
rangement, and is absolutely self-feeding.
Is excessively light, and can be carried by one man, who can
with the No. 1 size (weighing only 35 lbs.) drill 40 holes
½ in. diameter and 1½ in. deep per minute, in the hardest Aber-
deen granite for splitting purposes.

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STEAM and HYDRAULIC WINDING and PUMPING ENGINES
of all kinds.

DUNN'S ROCK DRILL,

AND
AIR COMPRESSORS.



DRIVING BED ROCK
TUNNELS, SINKING
SHAFTS, AND PERFORMING
OPEN FIELD OPERATIONS,
IS THE
CHEAPEST, SIMPLEST,
STRONGEST, & MOST EFFECTIVE
DRILL IN THE WORLD.
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(LIMITED).

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IMPORTANT NOTICE TO MINE PROPRIETORS.

MR. GEORGE GREEN, ENGINEER, ABERYSTWYTH.
SUPPLIES MACHINES under the above Company's Patents for
DRESSING all METALLIC ORES. Dressing-floors having these Machines pos-
sess the following advantages:—

- 1.—THEY ARE CHEAPER THAN ANY OTHER KIND IN FIRST OUTLAY.
- 2.—ONLY ABOUT ONE-FOURTH OF THE SPACE USUALLY OCCUPIED
BY DRESSING-FLOORS IS REQUIRED.
- 3.—FROM 60 TO 70 PER CENT. OF THE LABOUR IN DRESSING, AND
FROM 5 TO 10 PER CENT. OF ORE OTHERWISE LOST, IS SAVED.
- 4.—THEY ARE THE ONLY MACHINES THAT MAKE THE ORE CLEAN
FOR MARKET AT ONE OPERATION.

They have been supplied to some of the principal mines in the United Kingdom
and abroad—viz.,

The Greenside Mines, Patterdale, Cumberland; London Lead Company's Mines
Darlington, Colberry, Nanthead, and Bollyhope; the Stonecroft and Greyside
Mines, Hexham, Northumberland; Wanlockhead Mines, Abington, Scotland (the
Duke of Buccleuch's); Bewick Partners, Haydon Bridge; the Old Darren, Esqair-
myn, and Ystumtuen Mines, in Cardiganshire; Mr. Beaumont's W.B. Mines,
Darlington; also Mr. Sewell, for Argentinian Copper Mines, Peru; the Brats-
berg Copper Mines, Norway, and Mines in Italy, Germany, United States of
America, and Australia from all of whom certificates of the complete efficiency of
the system can be had.

WASTE HEAPS, consisting of refuse chats and skimpings of a
former washing, containing a mixture of lead, blende, and sulphur,
DRESSED TO A PROFIT.

Mr. BAINBRIDGE, C.E., of the London Company's Mines, Middleton-
in-Teesdale, by Darlington, writing on the 20th March, 1876, says—"The yearly
profit on our Nanthead waste heaps amounted last year to £500, besides the ma-
chinery being occupied for some months in dressing ore-stuff from the mines. Of
course, if it had been wholly engaged in dressing wastes our returns would have
been greater; but it is giving us every satisfaction, and bringing the waste heaps
into profitable use, which would otherwise remain dormant."

Mr. T. B. STEWART, Manager of the Duke of Buccleuch's Mines,
Wanlockhead, Abington, N.B., writing on 20th March, 1876, says—"I have much
pleasure in stating that a full and superior set of your Ore Dressing Machinery has
been at work at these mines for fully a month, and each day as the moving parts
become smoother, and those in charge understand the working of the machinery
better, it gives increasing satisfaction, the ore being dressed more quickly, cheaply,
and satisfactorily than by any other method."

Mr. BAINBRIDGE, speaking of machinery supplied Colberry Mines,
says—"Your machinery saves fully one-half on old wages, and vastly more on the
wages we have now to pay. Over and above the saving in cost is the saving in ore,
which is a not much short of 10 per cent."

GREENSIDE MINE COMPANY, Patterdale, near Penrith, say—"The
separation which they make is complete."

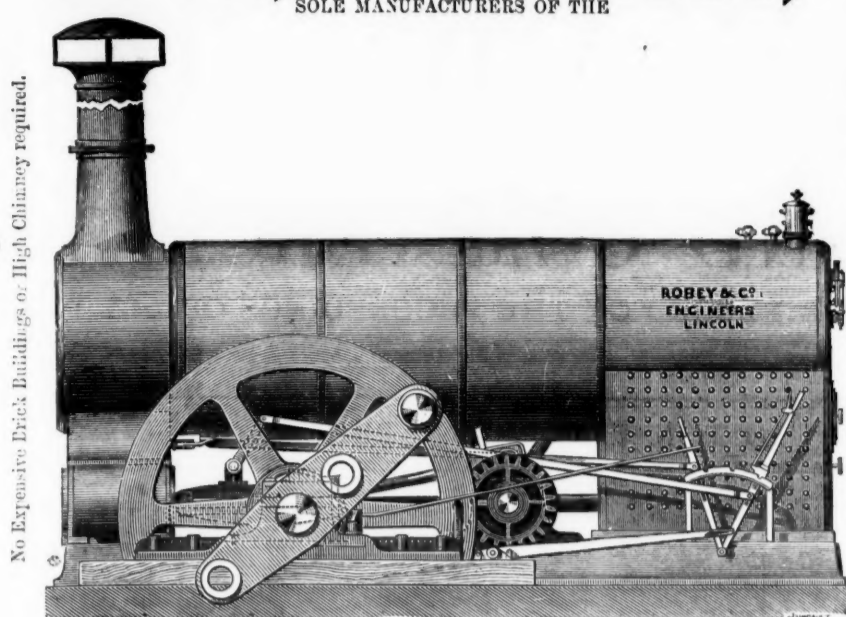
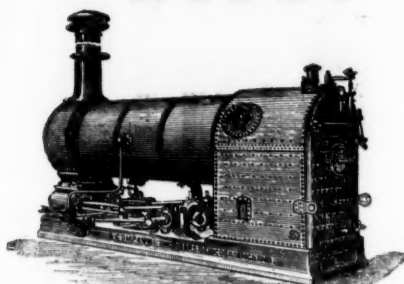
Mr. MONTAGUE BEALE says—"It will separate ore, however close
the mechanical mixture, in such a way as no other machines can do."

Mr. C. DODSWORTH says—"It is the very best for the purpose
and will do for any kind of metallic ores—the very thing so long needed for dress-
ing floors."

Drawings, specifications, and estimates will be forwarded on application to—
GEORGE GREEN, M.E., ABERYSTWYTH SOUTH WALES.

ROBEY & CO., ENGINEERS, LINCOLN.
SOLE MANUFACTURERS OF THE

SOLE MANUFACTURERS OF THE



PATENT IMPROVED ROBEY MINING ENGINE,
OF ALL SIZES, FROM 4 TO 50-HORSE POWER.

This New Engine is free from all the objections that can be urged against using the Semi-Portable Engine for permanent work, because it possesses the rigidity and durability of the Horizontal Engine, and at the same time retains the advantages of the Semi-Portable in saving time and expense in fixing.

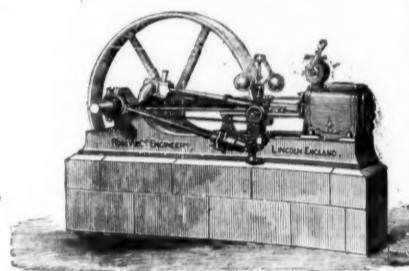
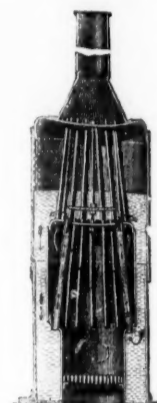
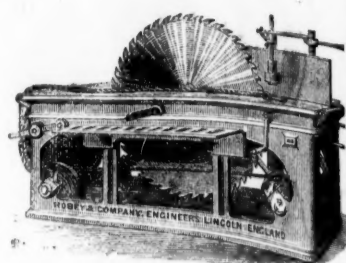
THE PATENT ROBEY FIXED ENGINE

(Also above illustrated) is admirably adapted for driving Rolling Mills, Saw Mills, Brick Machinery, Pumping Machinery, and all descriptions of Fixed Machinery.

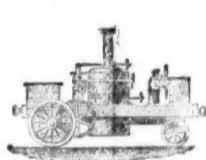
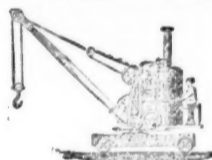
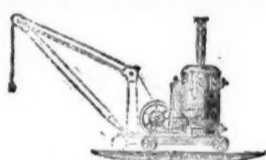
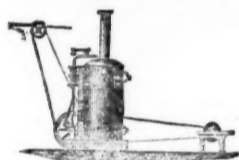
ENGINES UP TO 200 EFFECTIVE HORSE-POWER
ALWAYS IN PROGRESS.

Prices and full particulars of all the Machinery here illustrated on application to the Sole Manufacturers.

ROBEY & CO.,
ENGINEERS, LINCOLN, ENGLAND.



CHAPLIN'S PATENT PORTABLE STEAM ENGINES & BOILERS.

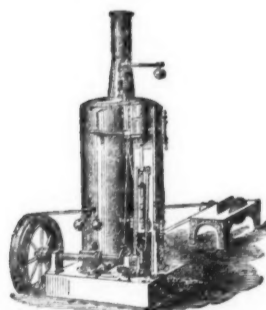


The ORIGINAL combined Vertical Engines and Boilers, introduced by Mr. CHAPLIN in 1855, specially designed and adapted for

Pumping, Winding, Hoisting, Sawing, Driving Machinery, and for General Contractors' Work, Railway Sidings, Coal Mines, Quarries, Gas Works, &c.

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WORKS:—REGENT'S CANAL DOCK, 602, COMMERCIAL ROAD EAST, LONDON, E. (Near Stepney Station).

Parties are cautioned against using or purchasing Imitations or Infringements of these Patent Manufactures.



From 1 to 30-horse power. With Gearing for Pumping, Sawing,
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PORTABLE and FIXED STEAM CRANES;
STEAM DERRICK CRANES and OVERHEAD TRAVELLERS;
HOISTING ENGINES, Portable or Fixed, with or without Jib;
SHIPS' ENGINES and DISTILLING APPARATUS (sanctioned
by H.M. Government);
ENGINES and BOILERS, for light Screw and Paddle Steamers;
STEAM YACHTS & LAUNCHES; STEAM CARGO BARGES, &c.

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THE DIAMOND
ROCK BORING COMPANY

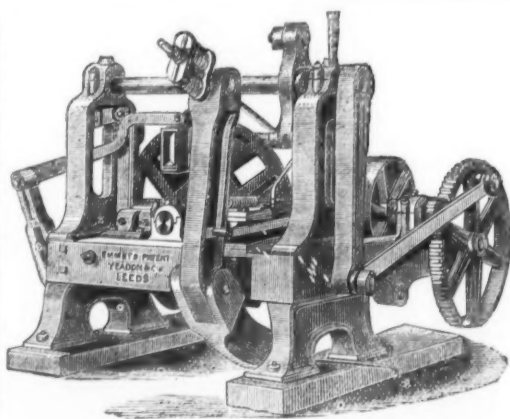
(LIMITED).

CONTRACTORS, ARTESIAN WELL BORERS, AND SINKERS.

GOLD MEDAL FOR ROCK BORING MACHINERY	EXHIBITION, 1873.
SILVER MEDAL "	" "	FALMOUTH, 1875.

This company now undertake the sinking of Artesian Wells. Their system rivals all others, both for efficiency and speed, and in addition produces "Solid Cores" from the Rocks bored through, thus giving invaluable evidence of the strata passed through as the work progresses.—Vide *Brewers' Journal*, October, 1876, and other papers.

OFFICES.—2, WESTMINSTER CHAMBERS, LONDON, S.W.



EMMET'S
A1 PATENT BRICK MACHINE.

This is the ONLY Machine which presses the Brick equally on BOTH sides, each plunger entering the mould plate $\frac{3}{8}$ in., and turning out 12,000 SQUARE, SOLID, PRESSED Bricks per day, READY AT ONCE FOR THE KILN.

SOLE MAKERS—

YEADON AND CO.,
CROWN POINT FOUNDRY, LEEDS.
Makers of EVERY DESCRIPTION of Colliery and Brick Yard
Plant.

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Original Correspondence.

WASTE OF SMALL COAL—PATENT FUEL—No. IV.

Sir,—Before dismissing completely this subject I think the enclosed particulars, which I received lately, may prove interesting to your readers, having as it has a great bearing on the choice of fuel.

STEAM FUEL.—The establishment for the manufacture of tobacco, one of the most important public institutions in France, is most national in its mode of dealing with tenders for the supply of fuel. The question with that department is not which is the lowest tender, but which fuel generates the largest quantity of steam at the least cost? There is a great difference, of course, in the heating power of coals, weight for weight, according to the mines from which they come, varying from 5 to 9 in evaporative power, and which is quite independent of the percentage of ash. An annual meeting is held at Nantes to receive tenders for fuel for the tobacco manufacturing there. I am indebted to Mr. Paul Guillemant, engineer, Paris, for the subjoined table of results, from which it will be seen that for four years in succession Mr. Henschen's tenders have been accepted, although his prices were always higher than those of his competitors for the contracts. There is, however, a Welsh steam fuel—that of the Metropolitan Patent Fuel Company, at Briton Ferry—manufactured from Glynceorrwg coal, which is priced at 1s. per ton higher than any of the other coals in the table would be superior to the best of them. For the purpose of comparison I have introduced this fuel into the table, placing it on the first line in each of the four years given:—

	1868.	Price.	Steam produced.	Cost per ton.
Metropolitan Patent Fuel	Glynceorrwg coal fuel	32 20	9.20*	3 05
Company	Montjean fuel	31 0	7.848	3 95
Henschen	Cardiff coal	30 0	7.134	4 20.5
Pergeine	English coals, through and	33 45	7.222	4 63.1
Boila	Ditto	31 35	8.990	5 31.3
Leobert	Ditto	30 65	8.989	5 38.7
Goldard and Coquard	Fuel, Cardiff coal	29 95	7.074	4 23.3

	1869.	Price.	Steam produced.	Cost per ton.
Metropolitan Patent Fuel	Glynceorrwg small coal fuel	32 20	9.20	3 05
Company	Montjean fuel	31 25	8.716	3 58.5
Henschen	Cardiff large coal	29 0	7.619	3 85
Pergeine	English coal "Lewis"	30 0	7.490	4 0.5
Boila	Wari's fuel	29 50	6.709	4 46.5
Leobert	Ditto	31 0	7.719	4 0
Goldard and Coquard	Cardiff fuel	28 0	7.378	3 91

	1870.	Price.	Steam produced.	Cost per ton.
Metropolitan Patent Fuel	Glynceorrwg small coal fuel	32 0	9.20	3 0.1
Company	Montjean fuel	29 95	7.840	3 69.3
Henschen	English coal fuel	28 0	6.880	4 25
Pergeine	Ditto	29 0	6.883	4 44

	1871.	Price.	Steam produced.	Cost per ton.
Metropolitan Patent Fuel	Glynceorrwg small coal fuel	31 30	9.20	3 15
Company	Montjean fuel	30 50	7.407	4 05.5
Henschen	Cardiff coal fuel	30 0	6.791	4 41.7
Pergeine	English coal "Lewis"	29 0	6.920	4 37.9

* It appears by the Admiralty reports of trials at Portsmouth that this Glynceorrwg fuel is smokeless 95 minutes in every 100.

These figures show that the prices paid for Henschen's fuel have always exceeded those asked by others, whilst the cost of steam produced by his was lowest, but had the Metropolitan Patent Fuel Company tendered at the prices above named they would, no doubt, have been accepted.

Patent fuel or agglomerated coal dust is the most economical when properly used, and that it is not more generally adopted is owing to the character of the grates or bars of the furnaces which are adapted to the use of fuel, though easily convertible. Many proofs have been furnished lately that the Metropolitan Patent Fuel is the most powerful steam producer known, and at a higher price per ton than the very best still be found the most economical.

Old Vicarage House, Greenwich. A. VASSARD.

RAILWAYS, AND THEIR INFLUENCE ON COMMERCE, AND IN THE DEVELOPMENT OF COUNTRIES.

Sir,—The following list, compiled by Dr. Stürmer, of Germany, may be taken as the approximate length of railways in operation in each country at the end of 1874. The lengths having been stated in kilometres were reduced to miles, a kilometre being 1093.6 yards:—

ASIA—7614 MILES.			
East Indies	6,488	Asia Minor..... Miles	249
Ceylon	82	Japan	161
Caucasus	624		38
AFRICA—1453 MILES.			
Egypt	949	Mauritius	64
Algiers	334	Tunis	37
Gade Colony	67		
AMERICA—83,209 MILES.			
United States	Miles 74,454	British Guano	Miles
Canada	4,106	Honduras	61
Argentina	984	Panama	47
Peru	962	Paraguay	48
Brazil	831	Costa Rica	19
Chili	616	Jamaica	27
Cuba	398	Bolivar	20
Mexico	377	Venezuela	20
Uruguay	189		

AUSTRALIA—1755 MILES.					
Victoria	Miles	561	Tasmania	Miles	45
New South Wales		418	West Australia		40
Queensland		263	Tahiti		3
South Australia		196	New Zealand		237

Table showing the increase in railway formation in ten years:—			
	1865.	1870.	1875.
Europe	Miles 46,695	64,463	88,735
Asia.....	3,480	5,053	7,644
Africa	520	1,101	1,452

America	38,981	1,101	1,433
Australia	512	59,898	83,209
		1,126	1,755
Total	90,168	131,641	182,796

These tables must be taken subject to explanation. Most of the railways in Great Britain have double lines, and, in some cases, quadruple lines, where the traffic is great. Many of the railways in the United States have a single line only over a considerable part of their length.

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		182,793

These tables must be taken subject to explanation. Most of the railways in Great Britain have double lines, and in some cases, quadruple lines, where the traffic is great. Many of the railways in the United States have a single line only over a considerable part of their length. The same will apply to many railways in America and to other countries where they have recently been introduced, as in Asia and Africa, the gauge in some cases being much narrower than the ordinary British gauge; it is understood, however, that these are locomotive lines, either for passenger or mineral traffic, or both.

The effect of the general introduction of railways throughout Great Britain may be stated to be the immense amount of travelling they occasion, the rapid growth of postal communication, the interchange of commodities between one district and another (by reason of the facilities they afford for the carriage of those commodities), and the development of the mineral wealth of the kingdom. Fields of coal, ironstone, limestone, and sandstone have been opened, which, but for the existence of the railway and locomotive, might have remained untouched for ages to come. It is feared that this development of minerals has of late been proceeding at too rapid a rate. Capital and railway accommodation have not been wanting to furnish supplies of mineral for the future. Unhappily, the demand has not kept pace with the powers of production that now exist in the country. From some cause, not sufficiently explained, the iron trade of this country has been in a declining state for three years or more—one reason, no doubt, is the unsettled condition of the rail manu-

facture. We are expecting great things from the use of steel rails and steel-headed rails in lieu of iron, and as the cost of steel rails is not now much greater than iron, and perhaps on a par with the best iron ones, users of rails seem to be holding back and awaiting the results of experimental tests as to the relative value of iron and steel rails for durability and safety. A rail of the best homogeneous iron is perhaps more to be relied on than a steel rail, though the latter may have extreme hardness as its chief characteristic. It is the question of cheap steel rails versus ordinary piled rails which unsettles the iron manufacture, and has brought it to a very low rate of production in this particular branch of it. The limited production has affected injuriously the coal trade of the country, inducing a loosened demand for steam and manufacturing coal, quite sufficient to account for the present depression of prices and the lessened output of coal. It might be expected that railway interests would suffer in common with others, but this is only partially so, as railway dividends will show; and, when we consider the regular increase of passenger traffic, their rates for minerals almost unaltered, and the payments all in cash, not fluctuating with the good and bad times as other trades do, we are led to say that railways are good investments, and in new countries having rich minerals in store cannot fail eventually to succeed.

Railways are the pioneers to civilisation; if one-half the amount that is expended on the absurdity of standing armies in Europe were expended on the development of new countries by the introduction of railways for that purpose the Continent of Africa might by this means be explored, its wealth developed, and the healthy parts colonised from the overabundant populations of Europe. Australia, New Guinea, Siberia, and some other parts of Asia also hold out inducements for efforts of this kind, which could only be effected by the possessors of large capital. The produce of those countries—both land and mineral—would come in exchange for the commodities of Europe—thus capital and labour would both find employment, the carrying trade on sea and land would be largely benefited, and labour generally have more scope and better reward.

It is with some confidence I offer these suggestions for colonising Africa and other almost equally unknown regions, known, perhaps, only to solitary travellers, toiling over marshes and uncultivated tracts, which nothing but the introduction of the railway can make accessible and bring into profitable use. Undertakings like these would be objects worthy of the merchant princes of England to accomplish, subjugating countries not by fire and the sword, but by the introduction of railways; commerce and the arts of peace would follow in their train.

On looking over the list of countries it will be observed that some have but short distances of railway open, and others—such as China—have scarcely adopted the railway system. Let us hope this will prove a great benefit to the country, and lead to its general adoption, and the iron rail and other trades dependent on it may hereafter enjoy a more healthy existence.

Some years ago Mr. T. E. Harrison, engineer for the North-Eastern Railway, estimated the duration of iron rails to be about nine years. Assuming four-fifths of the British lines to be double, there will be 30,052 miles of single line laying, and every year for the next nine years 3340 miles of rails, either of iron or steel, would be required for replacing worn-out ones. Reckoning a mile of rails to be 125 tons weight this would give 417,500 tons of rails in each year to be supplied, and chairs and fastenings in proportion to these. Railways are being constructed in Italy from Rome to Naples, in Russia, New Zealand, and other parts of the world, so that with the requirements for new lines, and the renewals for home railways, the trade should not long be in the state of depression in which it is at the present time.

McKEAN'S ROCK DRILL.

Sir,—I trust that many of your regular readers have perused the long and interesting account by Sir George Denys, Bart., in last Saturday's Journal, of the success that has attended his use of McKean's Rock Drill.

It has been successfully put to work as many know, by Capt. Wm. Skewis, of Tavistock, and myself in West Maria and Fortescue Consols, the mine immediately adjoining Devon Great Consols to the west, and I am glad to say that a set of three to sink a shaft and drive cross-cuts will ere long be at work in South Roskear, the mine immediately adjoining Dolcoath to the north, so our friends Messrs. Loam and Son will not long be able to say that the Barrow Drill is the only one ever successfully worked in Cornwall.

Capt. Skewis or I shall be very happy to give every facility for viewing the rock drill already at work. J. CURRIE GREGORY.
85, Gracechurch-street, London, April 16.

MINING IN NEWFOUNDLAND.

Sir,—At a time like the present, when it is seriously proposed by one of our miners' advocates, Mr. Macdonald, M.P., that some 20,000 of the more youthful of them should forthwith emigrate to an indefinite somewhere in Western America, with the chance of obtaining remunerative employment, I cannot refrain from noticing that the proposition might be made a good deal more definite by pointing at once to Eastern America instead, and to that portion of it known as Newfoundland, having an area of 42,000 square miles, and only 159,000 inhabitants altogether, and these mostly along the coast line.

I am induced to this after perusing the letter, signed "J. B.," in the Supplement to last week's Journal. I have never visited that colony, and am not at all likely to go there. But about 10 years ago Mr. Murray, F.G.S., who has charge of the Geological Survey of Newfoundland, was in London, and that gentleman fully convinced me then that if certain "red tape" and other governmental obstacles then existing were removed, metal mining in Newfoundland might become reasonably profitable. One copper mine since then has certainly turned out very satisfactorily.

In 1875 a friend from St. John's, Newfoundland, brought me over some remarkable specimens of lead ore for my cabinet, and three big lumps of copper pyrites, assaying severally 6, 11, and 15 per cent. for copper. He also gave me a copy of Mr. Murray's elaborate report to the Colonial Government: this very interesting and important report I cannot find at the moment to quote from, touching the then existing obstructions to the opening up of the colony. Last year Mr. Stanford, of Charing Cross, published a capital little book of 75 pages, entitled "Geography of Newfoundland," by James P. Howley, Assistant Geological Surveyor. Under the heading "Geology," p. 45, I find that the geological systems known to exist in Newfoundland are the carboniferous, Devonian, middle and lower silurian, huronian, and Laurentian, the latter spreading over nearly two-thirds of the island. Under the heading "Economics," p. 49, are catalogued native gold, silver, and copper, silver-lead and nickel ores, grey, yellow, and variegated copper ores, magnetic, chromic, specular, and hematite iron ores, iron pyrites, iron sand, and Vivianite, zinc and manganese ores, molybdena, coal, limestone, marbles, barytes, gypsum, kaolin, brick clays, roofing slates, granites, gneisses, serpentines, sandstone, whetstone, asbestos, statite, petroleum, &c. This is not at all an unattractive bill of fare in a healthy, English speaking, untried British colony within seven days' steaming from Liverpool every fortnight, where bread, and butter, and beef are about half the price they are with us.

Your correspondent in St. John's writes that "the whole country is thrown open for settlement now." Obstacles heretofore in the way are, in fact, removed. The Mother Country has recently sent out a Governor, who has already, I hear, intelligently thrown out suggestions for beneficial alterations, some of which he is empowered to direct. The legislators are by no means slow at passing wholesome Bills through their Parliament. The money-making inhabitants of St. John's are by no means niggardly in the way of finding funds for colonial improvements. These facts make just all the difference as regards capital flowing from this side the Atlantic into Newfoundland mining enterprise. Of course, it will be asked, Why do not the rich men of St. John's themselves go and dig for minerals? One answer may be given to this, perhaps, is that they cannot dig; another in the more agreeable fact to them that they have not knocked on the head all the seals in the sea just yet. The "ile" struck there a long while ago has been running in almost a continuous full stream ever since, and so long as this source of profitable adventure lasts,

with its periodic excitement, just as long are the moneyed men of St. John's likely to "let well alone," and stand by their own craft.

Two important facts at "Home" (as the islanders always call this country)—a surplus of miners, and a surfeit of unemployed capital waiting investment—suggest the idea to those who feel inclined for the enterprise of shying a few thousands across the water under judicious and skilful management in the way of prospecting at the chief points of the island.

Every facility will be readily afforded, I am told, by the Government officials. Metals, when found and made notes of, may be had in Government "setts" for the asking, and no premiums have to be paid. The island for the most part is not vulgarised by townships, parochial boundaries, &c. Hospitality prevails everywhere. Fish in season is "no price," and "game" may be had for the killing. Could not some of our poor miners find work to do in such a country, and will not somebody kindly help them to it?

Tuebrook, Liverpool, April 19.

T. A. READWIN, F.G.S.

THE THARSIS COMPANY—THE DIVIDEND.

Sir,—The report of the directors, just issued, proposes to pay a dividend of 20 per cent. Considerable curiosity has been expressed to know how, during a time of so great depression in the products of their business, such large profits have been made. Their report does not clear the mystery. As compared with last year it states there is a loss on—

236,150 tons pyrites, at 8s. 3d. per ton	£97,411 17 6
8,613 tons refined copper, at 5l. 8s. 3d. per ton	44,491 10 7
148,707 tons iron ore, at 1s. 11½d. per ton	14,560 17 11
In addition to above, 13,000l. less has been expended on over-burden account.	£155,464 6 0

On the other side of the account there is an increase of 1627 tons refined copper (say) at a profit of 20l. per ton ... 32,540 0 0

Showing a loss of ... £123,924 6 0

Stocks have been increased in this country to the amount of 50,000l., principally of refined copper, which has fallen in price about 7l. per ton since Jan. 1, the stock on hand being 1446 tons at that date, since when about 3000 tons have been made. This is a serious loss to the company for the current year.

Iron ore is said to be all sold, but at what price? Iron has not been so low for ten years. The prospects of the company seem gloomy in the extreme, and how, with such a serious depreciation in the value of their products, and according to the report of the directors about 124,000l. have to be accounted for, they manage to pay a 20 per cent. dividend, whereas there only appears something like 10 per cent. at the very outside.

Glasgow, April 17.

CALIFORNIAN MINES—COMSTOCK LODE.

Sir,—It is amusing, if nothing else, to read the amount of twaddle in your Mining and Stock Exchange news as to this lode. One would fancy, to read them, that every mine was a prize. Professor Raymond's official reports are quoted as to the enormous yield. I sometimes wonder, do the writers in the Journal believe all they write? It is true that much riches have been got from the Comstock lode, but according to information I have, only four out of fifteen of these mines pay, the rest of them are hoping almost against hope of reaching something that will pay, thus—

O. 1700 ft. deep.	Pays.
C. 1500 "	Pays.
C. 1800 "	Pays.
B. Worked through other mines	Don't pay.
G. Used to be a good mine	Don't pay.
S. 2300 ft. deep.	Don't pay.
H. 2300 "	Don't pay.
C.	Don't pay.
B.	Don't pay much.
E.	Don't pay much.
A.	Don't pay.
I. 2300 ft. deep.	Don't pay.
Y. 2000 "	Don't pay.
K.	Don't pay.
C. 2000 ft. deep, used to be a good mine.	Don't pay.
B. 1800 "	Pays.

I hope Englishmen will ponder before sending their money there.

ENGINEER.

AUSTRALIAN GOLD COMPANIES.

Sir,—In last week's Journal Mr. Dicker, who introduced the Golden Crown, Imperial Crown, Mariner's Reef, Australian Mines Investment Company, Sir John Moore, London and St. Arnaud, and the Winter's Freehold Mines, and edited a Gazette, writes in defence of his conduct. As an investor I should like him to furnish, through your medium, some information as to the above companies:—

1.—What sum was paid to the vendor for the interest in the Golden Crown Company, as registered in England, and what dividends have accrued since such registration? and why, if the company exists, has not the meeting of the shareholders been convened, and some regard been shown by a periodical statement to the unfortunate holders as to the working of the mine?

2.—Why should the shareholders in the Imperial Crown be kept in the dark as to the progress of this undertaking?

3.—Let anyone refer to Mr. Dicker's Gazette, published 1871 to 1874, and peruse them carefully as to the extraordinary statements respecting the value of the Mariner's Reef Mine, and what disappointments have been met with as to any return. Last year a circular was issued stating that the mine had been sold, but the shareholders in England might secure it on the payment of a certain sum; accordingly a meeting was convened, the amount subscribed, and the mine secured, as well as from what the shareholders were told at the meeting sufficient means to open up and develop the property. It was announced that it was a valuable property, and we, as shareholders, were congratulated on securing it at a sum one-sixth of its value in machinery alone. Twelve months have elapsed, and no tidings in any form furnished.

4.—Perhaps Mr. Dicker will furnish a full and complete statement of the cost of purchase on each mine forming the Australian Mines Investment Company; the dividends paid since its formation; the legal costs, commission to himself and his agent abroad; the amount of dividends paid to the shareholders; the office expenses in London; board of management, which really Mr. Dicker personally represents, judging from his allusion as to the buying of the interests in the several mines under the above head. And further, perhaps he will enlighten us as to what calls have been met, as many of the companies may not have fully paid-up shares; and generally state the prospects of the concern with its two or five dividend-paying items, which no doubt will barely pay directors' fees, office expenses, &c.

5.—The Sir John Moore affair, I fear, will not bear investigation, being one of those transactions which Mr. Dicker ought to have enquired into before he recommended his clients to invest in it.

6.—The London and St. Arnaud and Winter's Freehold Companies have been, no doubt, fairly proved, but the returns not realising expectations have caused the shareholders to despond.

Now, the simple facts are these: The shareholders have, through Mr. Dicker's Gazette, invested in the mines enumerated, and expected, he being a gentleman well versed in Australian mining, a return commensurate with, as he terms it, a fair mining risk. That not being arrived at, and no information afforded as to the progress or otherwise of the ventures, although Mr. Dicker must have had advice, the shareholders naturally have said—We have been deceived, and better not throw good money after bad, or support him again, as everything has turned out such unfortunate failures. Mr. Dicker alone knows the mines, their situation, &c., and ought, as he has had advice, to have made them public, like all legitimate mining companies do. Probably Mr. Dicker, finding advice bad, might have sold his interest in various ventures, and advised his intimate friends to act accordingly. Anyhow, it is to be hoped that an investigation will be made into the method of conducting the several companies, and that Mr. Dicker will furnish a succinct account of each undertaking, with its prospects, and recommend such a system of re-organization and advice from time to time as will be acceptable to his clients. There can be no question as to Mr. Dicker's

ability or acquaintance with mining generally, but he ought in common fairness, as the sole representative and adviser in England, to keep his clients well informed, and the shareholders' meetings convened regularly.

WATER-WHEELS.

SIR.—Referring to the letter of "Enquirer" in the Journal of April 14, I should imagine there must be a printer's error as to a turbine wheel forty feet diameter. Turbines are not made of this diameter, or of a size at all approaching to it. I have a good turbine, made under Schiele's patent by the North Moor Foundry Company, which was supplied by them to develop 25 horse power, under a head of water 14 ft. high. The turbine wheel is 2 ft. 6 in. diameter and 1 ft. 8 in. wide, and by increasing the head of water about 4 ft. the machine could be made equal to a water-wheel 40 ft. x 4 ft. This turbine is valued at 53l. on rail here. H. C. Llanddies, April 16.

ENGLAND, AND HER HOME INDUSTRIES.

SIR.—That we shall have war at an early date is now certain, and the consequences looming in the distance are most significant and momentous to England. That the Czar will master, and far less over-run, Turkey is extremely doubtful, yet, should he succeed, Austria and England would come in for most of the spoil—the fair fields of Turkey would in case of disruption be annexed to Austria, and Constantinople, with the Bosphorus and the Dardanelles, pass on to England. We require no other territory so long as Egypt becomes an independent kingdom and the Kivedie remains our friend. All that we can desire is the command of the Mediterranean against the aggressive power of Russia acting in the Black Sea. We acquired an interest in the Suez Canal, and should we be required to assist the Turk, why not advance money on the material security of Constantinople, and in case of Turkish default or disintegration we could by mutual agreement hypothecate the city and its fortifications.

It is now time that we should look after our interests at home, and examine somewhat in detail and earnestly the securities we possess. In the first place, the surface of the earth produces the sustenance for man and animal creation, but the fruition of the land cannot be obtained excepting through the "sweat of the brow" and the "labour of the hands." Industry and sinews are indispensable to bring forth the fruits of the soil. So likewise the hidden wealth of the earth would lie dormant and undeveloped without the aid of enterprise, and the persevering industry and application of labour by the hard-working and hopeful miner, whose energies no obstacle can daunt or difficulty deter in his earnest search for the wealth contained in the mineral chambers below the surface. These from time to time are laid open, and the discovery of one deposit after another show that, notwithstanding all our past products and returns, the future shows no signs of even approaching exhaustion, but on the contrary, so far as lead is concerned, the very reverse.

For the year 1876, published in December last, Durham and Northumberland yielded 22,304 tons of dressed ore; Montgomeryshire, 8940; Shropshire, 7923; Cardiganshire, 5833; Isle of Man, 4429; Scotland, 4109; Yorkshire, 4050; the total production of the United Kingdom being 77,746 tons, containing 57,435 tons of metal and 487,358 ozs of silver, the value of the two ores being 1,024,107l. to the miner, and the metals to the smelter were valued at 1,298,463l. and 1,127,389l. respectively. However, to show the importance of the mineral products of the United Kingdom, we may observe that for the year referred to the aggregate value to the miner was valued at 57,333,913l. To realise this sum the products were—coal 131,897,105 tons; iron ore, 15,821,060 tons; copper ore, 71,523 tons; tin ore, 13,996 tons; lead ore, 77,746 tons; zinc ore, 23,978 tons; iron pyrites, 48,036 tons; arsenic, 5061 tons; manganese, 3205 tons; ore and amber, 5315 tons; wolfram and tung-ta, 46 tons; plumbago, 20 tons; fluor-spar, 350 tons; clays, 3,008,444 tons; oil shales, 442,333 tons; salt, 2,316,644 tons; barytes, 15,549 tons; and cinnabar, 250,122 tons. Thus we must conclude that agriculture and mining are the sources from which spring all our wealth. The fruition of the earth at surface and underground gives rise to all our manufacture, enterprise, trade, and commerce. The first is necessary to the existence of mankind, and the latter is indispensable to every branch of social prosperity, manufacturing and commercial expansion, and the main spring of England's material wealth.

The Registrar-General has furnished his annual summary for the year 1876. London, within the present bills of mortality, has an estimated population of 3,459,428 souls within its limits, and greater London, extending 15 miles around the centre, has 4,286,607. Of this vast population more than one moiety aged 20 and upwards were born out of London. For the year 1876 the births were 127,014 and the deaths 77,411; the number of males compared with females is 100 to 114. London is not only self-sustaining, but self-multiplying, and it sends out swarms of its children to other parts. The main density of the population to an acre in all London was 41 persons in 1871, as against 25 in the year 1841, or an increase of 64 per cent. in the three decades. As the metropolis produces no grain, vegetables nor fruits, meat nor fish, neither wool, flax, cotton, nor silk, every article of food and clothing its millions consume has to be imported, as well as the tea, sugar, coffee, and wine from tropical or distant climates. The bricks of its houses may have been dug out of its clay, but the wood of its floors, rafters, and furniture, the metals, and the very stones of the streets, have been imported, and what is more, all those articles—coal and fuel, and every other product in the shape of raw materials in various stages of manufacture or finished for use, have been paid for from the products of industry, coupled with the gains of trade, manufacture, and commerce. The greater part of the inhabitants are, no doubt, engaged in reciprocally supplying each other's wants, but their industry, skill, and services to others with out its borders—in the United Kingdom, the colonies, and abroad—are unquestionably the means of acquiring vastly extended revenues and the accumulation of rapid wealth.

In the construction and creation of our railroads a sum is involved of 600,000,000l., which produces a revenue in round numbers of 55,000,000l. annually. Of this sum about 22,000,000l. are gains, and 33,000,000l. cost of fuel, material, and maintenance, hence the profits average about 3l. 13s. 4d. per cent. only. The labour department involves some 280,000 employees, of whom about 140,000 are engaged in the locomotive department of goods, manufacture, and of minerals and earths, coupled with metals and products of all kinds associated with the trade and commerce and the constructive enterprise of the nation. This vast revenue of 55,000,000l.—wholly distributed in dividends and expenditure—springs from the industry of the country, and is wholly retained in the Mother Country.

The water supply to London is distributed by the several companies at a cost of 1,197,304l., of which 445,768l. is absorbed in working expenses, and 751,536l. accrues as profits on capital—i.e., at the average rate of 6½ per cent. on the money subscribed. The costs of coal in the manufacture of gas is 2,650,284l., including the supply through meters. The working expenses are 2,506,061l., but against this charge the companies get 780,781l. from the sales of coke and other sources, which augment the revenue to 3,431,065l. Of this sum 925,000l. are gains, and the balance expenditure. The aggregate capital engaged in the supply of water and gas amounts to 22,492,157l., and the joint profits 1,676,542l., equal to 7½ per cent. on the gross capital subscribed.

The most certain dividend mines upon the *tapie* are—Roman Gravel, 12½ to 13½; the dividend in March was 8s. 6d. a share, and three of the same amount were declared during the year 1876. Tankerville, 8½ to 9½; the dividend in March was 5s. a share, and three of like amount in 1876. Van, 35 to 35; dividend 16s. quarterly. Great Laxey, 21 to 22; dividend 10s. quarterly. Minera, 20; the last four dividends—May, 1876, to February, 1877—were 8s., 10s., 7s., and 8s. respectively. South Caradon, 125 to 130; the last quarterly dividend was 3l. a share, and for the year 1876-77 the four dividends amounted to 8l. a share. West Tolgus, 60 to 65; dividends for the past year 5l. a share. West Chiverton, 16½ to 17½; the dividends for 1875 were 7s. 6d. and 12s. 6d.; for 1876, 10s.; and in January last 10s. was declared. A loss of 1200l. has just been sustained through the stoppage of a lead smelting company, hence at the approaching audit the profits will necessarily become reduced, although the output shows no falling off.

As to progressive mines, there can be no question as to the promise and probable early expansion of Mynydd Gorddu, Van Conso, Grogwinion, Penstruthal, Cathedral, South Condurrow, Glenroy, Mellanear, Cargoll, West Pateley Bridge, West Seton, and Leadhills. These mines possess all the elements of early and substantial success, time and money having been expended in development and in making discoveries, which prove their inherent worth, and the established certainty of prospective prosperity.

We restrict this letter to a few comments on mines, water and gas companies, and railways. At some future date we shall refer to insurance, banking, finance, manufacturing, telegraph, docks, canals, Board of Works and City loans, land, shipping, building, tram, trusts, and miscellaneous enterprises and companies. But suffice for the present; already I have sadly trespassed upon your valuable space.

81, Bishopsgate-street, April 19.

R. TRIDINICK,
Consulting Mining Engineer.

PATELEY BRIDGE MINE.

SIR.—It must be gratifying to the shareholders to see this property fulfilling the most sanguine expectations, excepting that a little more time is required to develop it than was at first anticipated. I think the shareholders would now strongly object to the issuing of the unallotted shares below par. Should the special report expected be favourable, which I have no doubt will be the case, I think it would not be difficult to raise a few thousand pounds in debentures for a few years. It would be manifestly unfair to allow others to come in and reap superior advantages, when some of us took shares at par, and many others bought at a premium.

A SHAREHOLDER.

PRINCE OF WALES MINE.

SIR.—The present shareholders are carrying on this mine with apparently poor prospects, and it deserves consideration whether a change of plan might not be advisable. Great hopes have from time to time been centered upon this adventure. Once it was expected to afford abundant riches in silver, at another in arsenic, and again in tin. So sanguine were the expectations as to tin that a large sum of money was laid out in dressing-floors and other appliances, for a considerable trade. No sooner was this expenditure completed than the tin-bearing levels were abandoned, and have never since been worked. This abandonment was determined on in consequence of the engine-power not being equal to the working at deep levels. But it was a great misfortune for the shareholders to cease working the 90 fm. level when it was worth 20l. a fathom, and improving.

The mine, in fact, is not now having a fair chance, and what is wanted is to have an engine which will drain the mine effectually, and allow exploration to go on in the 90 and lower levels, where it is already proved there are riches. To do this I propose that the company should be re-constituted as a limited liability concern, and should in the scheme of reconstruction provide funds for a new engine and further trials in depth. There are at present 8000 effective shares, and if the new company were constituted in as many shares of 1l. each the old shareholders might be purchased out by an exchange of four old shares for one new one, having then fully-paid shares, or four old shares for two new ones, leaving a calling margin of 10s. per share. After thus buying the mine as a going concern the new company would have a capital to call of 6000l., of which 2000l. might be appropriated for the engine and fixing of same, and the remainder for working expenses. This scheme, if carried out, would give a reasonable prospect of profit, which might induce new capital to come in, and would improve the position of the present proprietary by giving them a mine with hope and vitality in it instead of the present dragging condition of affairs. Shareholders favourable to the proposed change should at once communicate to the secretary, so that the subject may have attention at the forthcoming meeting.

A SHAREHOLDER.

MINING IN CARDIGANSHIRE—MONYDD GORDDU.

SIR.—Cardiganshire lead mines, especially in the Aberystwith district, have decidedly much improved within the last month or so, and it is notable that the mines in which the most important discoveries have been made are those working in the same bearing rock on parallel to the north and south, and their situation is not far distant longitudinally. The mines so situated, and in which the most important discoveries have been made, are Fronzoch, East Darren, Penrhaw, and Mynydd Gorddu. Great improvements have taken place in several others close by, but not of equal magnitude. Fronzoch, East Darren, and Penrhaw are old mines; the two first are among the best mines of Cardiganshire, and the deepest, and although they have not been so prosperous for some time as they once were, I believe, if they continue the points from whence they have got their returns, prosperity is equally certain for the future as in the past. Mynydd Gorddu is a very young mine, only commenced to work in earnest about two years ago, and only 35 fms deep from surface. Their returns have been very regular, and well paid the working cost, which looks well for so young a mine. The discovery they made at the bottom of the mine last week, judging from the beautiful rocks of lead I saw on the floors, must be of the greatest importance. It is the principal talk of all mining people about, and I am told there is every prospect of its continuing, and, if so, a little time to open it will place them from paying cost to profit. I wish them every success, because if this should prove well it will be the means, probably, of putting life into Elger on the same lodes immediately to the west, and Court Grange, immediately to the south, and there is a good sett to the east of Mynydd Gorddu, on the same lode, where trials have been made, and a capital lead found of a very similar description to that discovered at Mynydd Gorddu, and I believe the sett will ere long command attention, and also others on the same champion lodes, to which I may refer.

Tycam, April 18.

JOHN JONES.

CARDIGANSHIRE MINES, A.D. 1877—No. XII.

SIR.—In my last I promised to commence my remarks this week about the Cwm Erfin Mine, being midway between the Goginan and the South Darren Mine, the former of which has been worked some 80 fms., and the latter about 60 fms. deeper than the Cwm Erfin Mine. I have before stated that the ore found in the deepest levels at South Darren is very much richer than in any of the shallower levels, and as the mine stands in the same valley as Cwm Erfin there can be no doubt in the mind of any miner, or even to anyone not practically acquainted with mining, that the same result will be obtained at Cwm Erfin as has been obtained at South Darren. In fact, if you were to select a property where you might expect a rich and practically inexhaustible mine I should say that spot would be Cwm Erfin. I have stated that it stands in the centre of Goginan, which has yielded upwards of 1,000,000l. worth of silver-lead ore, and the South Darren, which has yielded from 300,000l. to 400,000l. worth of rich silver-lead ore, but it has also for its nearest neighbour to the north of it the East Darren, which is nearly 100 fms. deeper than Cwm Erfin Mine, and has yielded nearly, if not quite, 2,000,000l. sterling of lead and silver, whilst Cwm Erfin, the shallowest of them, has yielded 800,000l. worth of silver-lead ore. For the last 20 years the engine shaft was never sunk a foot, but, on the contrary, as the ore was worked away from level to level the water was allowed to rise, and this method was pursued and persisted in until the mine was supposed to be robbed of all its discovered treasures, and in the few last years of its working between 30,000l. and 40,000l. were given in dividends, which continued to the last day of the last company's holdings, since which the mine has been worked by the much respected owner—Mr. Jones, of Llwyny Groes—who realised some profit from its working. Mr. Jones has now made arrangements with a most influential party in London for giving it a spirited working, and has consented to grant a new lease for 21 years on much more favourable terms than when last worked.

It is not necessary here to go into a detailed report of the mine; suffice it to say that a small amount of money and a very short time, with judicious management, cannot possibly fail to place Cwm Erfin as one of the richest mines ever yet worked in Cardiganshire.

I will next offer a few remarks on the Tynyron Mine, which up to this date has been worked by a single gentleman, lately deceased, who opened out an excellent course of blende and lead ore for some 80 fathoms long in the adit level. This course of ore is sufficient on the intended working capital, but as the adit can be pressed forward for some hundreds of fathoms further east, where the hill rises rapidly, there can be no doubt what-*ver* in the 80 and following years the profits I have named can easily be doubled, and will open out ground over the present adit that will last for many years, and will afford ample time and opportunity for bringing in much deeper adits, both on the course of the lodes and by short cuts from the side of the hill; in fact, other adits can be brought in 80 fathoms deeper than the present adit level, and, in a manner of speaking, must long open an inexhaustible supply of ore, at least for the present generation. Arrangements have been made for the erection of the requisite machinery, and he will at once proceed with development of the mine. In this case also a new lease has been procured at a reduced royalty, and this as well as Cwm Erfin are amply supplied with water for machinery of all kinds, and two such opportunities for making a lasting and profitable investment cannot again likely to occur, at any rate in this county for many years. The working of these mines will prove a great boon to the district, a source of wealth to the parties embarking in them, and give the much-respected owners—Mr. Jones and Colonel Powell—what they most justly and richly deserve—a good income from them.

Goginan, April 17.

ABSALOM FRANKS.

MINING LEASES.

SIR.—I am a member of the Cornwall Mining Institute, and attended the meeting held here on Tuesday, in last week, to hear Mr. Symons's lecture on Leases, and Mr. Rule's paper "On the Necessity for Improvement in the Conduct of Mining." I suppose you will report the proceedings of that meeting. I suppose you will type the following paragraphs in Mr. Symons's paper perhaps you will not object to include them in your report.

Mr. Symons said that most landowners are disposed to grant mining leases, but that he knew one who, when applied to by an agent for a grant, said to the applicant, "I will not grant a lease of my land, so help me God." You will not accredit that landowner for much piety.

In another part of his paper Mr. Symons gave an instance of his experience as a mining lessee. He said—"Most landowners charge in their leases what is called a minimum annual rent. Lord Penmouth, Mr. Fortescue, and several others do that; but it was never done, I believe, till within the last 20 years or thereabout. A few years ago I applied for a mining lease of a small tenement—about 36 or 40 acres—in St. Stephen's, by St. Austell, then the property of the late Hon. G. M. Fortescue. I found the terms to be: lease 25 guineas, annual rent 50l. I immediately declined it. Shortly afterwards, being in London, a broker asked me if I knew whether I could get a sett near a popular mine? I said, 'Yes, Teras is popular just now,' and I applied for a lease of land near, and found that the terms would not suit me. 'What are the terms?' said he. I told him, when he said, 'Apply for it at once for me. I will send 25 guineas for the lease, and 50l. rent is a trifle for a company to pay.' I complied, and obtained the draft of lease. He afterwards asked me to become a joint lessee, to which I consented on his undertaking to hold me harmless against the covenants. He gave me his written undertaking to that effect, advertised the mine, received about 2000l. deposits, embezzled it, cheated me out of 1700l., became bankrupt, and permitted all the responsibilities of the lease to fall on me. Fortunately for me the Lord's agent was lenient."

Such was Mr. Symons's experience, as given in his paper; I suppose the brokers in general are of a more respectable character, if not extermination would serve them right. The discussion after the reading of the papers was short, because of the limitation of time, those who came from the east wanting to go by the east train. I think that the Institute will effect a great amount of good in relation to mines.—*Camborne, April 17.*

A MEMBER.

GUNNISLAKE (CLITTERS) MINE.

SIR.—I am glad to see the bi-weekly report of this mine again appear in the Journal, although it does not give any information respecting the progress of the cross-cut south at the 188 fm. level towards the intersection of Craze's and other south lodes. The great future of this speculation (and upon which I was induced to buy shares) was the result to take place on the accomplishment of reaching this point. Will the captains, therefore, kindly enlighten the shareholders on this subject in their next report?

A SHAREHOLDER.

SOUTH CONDURROW AND WEST GODOLPHIN MINES.

SIR.—It is to me rather singular (the not being a financier may make the difference) how capitalists, large and small, make investments in foreign bonds and securities, which in so many instances have ruined thousands, whilst home ones are neglected. Having had some means unemployed a few years ago I speculated in mining shares, but acting indiscriminately, and by the advice of interested unscrupulous parties, got my fingers well burned, but have held on for a number of years in South Condurrow and West Godolphin Mines, which are both turning out well, notwithstanding the low price of tin. The former is paying dividends, and the next one is expected the best for some time past, the mine being considerably improved; and the latter mine—West Godolphin—would in all probability have also paid a dividend (as they had a credit of 923l.) at their last meeting had it not been that water having got into the mine, and the present engine being unable to keep it under, the committee came to the conclusion to get one more powerful. The output from the mine has considerably increased.

Belfast, April 17.

A SHAREHOLDER.

BEDFORD UNITED MINES.

SIR.—I am not a little surprised to see the evasive remarks of Mr. Laws in last week's Journal in reply to my questions of the previous week. I think he would have shown himself to be more deserving the position he holds if he had just said he could not answer, and had acknowledged himself beaten. After assuring Mr. Laws in my last letter that my object for writing that and the previous one was the benefit of my co-adventurers and neighbourhood, and not as he asserted "the abuse of himself and the committee," he never can think I am so selfish as to write him to obtain, and make use of privately, such an amount of valuable information as I asked for, which I consider every shareholder is fairly and legitimately entitled to, and which a secretary, or other servant of the company, is in all honour and fairness bound to furnish the shareholders publicly or by private circular. The shareholders should not be blindfolded, then squeezed into silence, or frozen out of their shares by such replies, which can only be equalled by the management of the company's property. Such subterfuges, however, are invariably resorted to for certain motives, and are with a certain class made to take the place of logic, and when so used they generally baffle unwary and unsuspecting shareholders. I can assure Mr. Laws that I am a shareholder in these mines, therefore I claim to be entitled to the information asked for in my last letter, but as he declines to reply I think we may reasonably calculate he cannot do so, therefore shall leave the first four questions in his hands as unanswerable, and for others to form their own judgement of; not so, however, with Nos. 5, 6, and 7 questions, for these I will endeavour to answer.

5. I need not trouble you again with the question, but will merely state that it is not practicable, judicious, and economical management.—6. Those who have the management would exhibit a far greater amount of wisdom if they were to confine their operations for the time being to the lode on which the engine shaft is being sunk.—7. If judicious and economical management were exercised at once I most unhesitatingly assert that their mines could be brought into a dividend-paying condition without calling upon the shareholders for another penny. The estimated liabilities over

assets, as laid before the last meeting, for the meeting in July next was only 3417, and the last sale of copper ore realised 2000 above the estimate, which brings the estimated deficiency back to 1417. The estimate, which brings the estimated deficiency back to 1417, is to cover which the shareholders at the last meeting made a call of 2s. per share, or 12000, so that at the next account-day without making any more calls the accounts should, according to the showing of Mr. Laws, show a balance in hand of 10500. If this be not true let Mr. Laws contradict it, and if it be true we have no need of another call to put the mine in a state to pay a dividend, no matter what Mr. Laws, the committee, or anyone else says to the contrary. Will Mr. Laws, if he can, kindly reply to the following questions:—1. Who is the company's auditor?—2. When was he appointed?—3. When did he, or any other unconcerned and impartial person, audit the company's books last?—4. Will the committee command to hold the next meeting on the mine?—5. Are the winzes which were suggested to be sunk by the Inspector of Mines commenced yet? If this question cannot be answered in the affirmative I think it would call for the Inspector's interference.

A VIGILANT SHAREHOLDER.

CAPTAIN TREGAY, AND PEDN-AN-DREA MINE.

SIR.—In last week's *Mining Journal* I observe another letter from Capt. Tregay, in which he refers to some work having been stopped early in 1876, "as soon as the company had begun to consider the question of discontinuing to work the mines." To prevent any misunderstanding, I beg to say that this is not what I alluded to when I asked whether any dead work was done at the expense of the late company after it was known the property was to be sold, but which work could be of no benefit except to the incoming purchasers. I meant during the last three or four months of the carrying on of the mine by the late company.

Capt. Tregay says that the mines produced under the late company 357,895 lb. worth of minerals, but he omits to add that this was for 20 years or more, and that though the average price of tin during that period must have been at least 30 to 40 per cent. above its present price, and at times nearly 100 per cent. higher, yet the total amount divided was only 14237. 10s., against 100,000 lb. in calls. Even if the mine improves in depth the costs will increase.

W. X.

CAPT. TREGAY, AND PEDN-AN-DREA MINES.

SIR.—Your correspondent "W. X." having shown his bad taste by giving the lie to my statements, I must discontinue correspondence with such an individual. I am not in the habit of making false statements, and, in this instance, can substantiate every word I have said or written on the subject. When next your correspondent comes forward as a pretended champion for the truth, let him show his earnestness by appearing under his own proper colours. Men who seek truth, and do battle for truth's sake, do not find it necessary to hide their faces; neither do they generally attack people through the public papers anonymously, or under false signatures.

W. TREGAY.

ROMAN GRAVELS MINING COMPANY.

SIR.—In last week's *Journal* is a letter from "A Shareholder of Some Years' Standing" in the Roman Gravels Mining Company, complaining of its financial management. At the annual meeting of shareholders, held May 30, I called attention to the same points as your correspondent now complains of, but without getting any satisfactory explanation or assurance, and the same policy has been continued since. As I have reason to believe in the intrinsic value of the mine itself, but have no confidence in the way it is managed, if your correspondent will communicate with me (you, Sir, will kindly give him my name), I shall be happy to join him in taking steps to get a different system adopted.

Market Harborough, April 19. ANOTHER SHAREHOLDER.

NEW CONSOLS SILVER AND ARSENIC WORKS.

SIR.—In last week's *Journal* I observe a letter signed by Mr. Edward Skewis, a gentleman whom I do not know, and if I ever saw him he certainly made such a slight impression on my mind that I have no recollection of him. Whether Mr. Skewis has been here or not within the last 18 months is best known to himself; if so, from his assertions, I am sure that many gentlemen who have visited these works will agree with me that he must have kept his eyes shut at the time, both with regard to the manipulation and chemical working of the process conducted by the chemist of New Consols. It appears from Mr. Skewis's remarks that he not only wants to cast a slur on the New Consols Works, but motives best known to himself, but also on me, of whom he knows nothing.

Whatever that gentleman's object is for making such vague observations I care not, as I have enjoyed a thorough technical education at one of the oldest and most celebrated "Berg Academies" in Germany, where I studied not only chemistry, but went through the full course of subjects connected with mining and metallurgy. Further, I am glad to say that my work at New Consols has been tested from time to time by two of the leading analysts in England, and I have received the praises of all who have made reports on my department. In conclusion, I may also remark that the present difficulties (which I hope will soon be settled) have nothing to do with the process, which produce of ore treated and precipitate made have shown.—*Callington, April 19.*

HENRY L. SIMMONS.

NEW CONSOLS MINE.

SIR.—Some of your correspondents seem to have been trying to lay the blame of the present state of things upon the manager, Capt. R. Pryor. Are they just in doing so? Has he, as manager, ever been left here to act upon his own judgement or responsibility in any such sense as are the managers of Dolcoath, Carn Brea, or Botalack? How would those mines get along if saddled with an expensive London office and London managing director, such as our company was weighted with, until delivered from the latter in August last? I have read with pleasure the letters in last week's *Journal* from "An Observant Miner" and "A Creditor," and can supplement their views by an incident from my own observation.

When last on the mine I noticed two of the new Oxland calciners already at work, and the third in preparation for fixing. The iron shell, of about 30 ft. length and 5 ft. diameter, was of very strong boiler plate, entirely new, made by a Glasgow shareholder, the price being 1700, delivered at Plymouth. By way of contrast, at Devon Great Consols, adjoining, where there are also three Oxland calciners at work, the iron shells of all three have been made out of old Cornish boilers, worn out for use as boilers, but serviceable enough for the present purpose when strengthened longitudinally as they are by four old bridge rails riveted on outside. Surely if the purchase of the materials for the erection of the calciners at New Consols had been left in the hands of Capt. Pryor he would readily have found many similar old boiler shells to serve the purpose as effectually, to the great advantage of the company. The voluminous reports presented to the shareholders last year by Messrs. Satterthwaite and Kennelly omitted to mention the above particulars respecting the new calciners; a doubt, therefore, naturally arises whether possibly other similar omissions might not have been noted by independent shareholders visiting the works with their eyes open.

Eighteen months ago, when treating 24 tons per day, I understood a profit of 2000 per month was already being realised so far as the mine and works were concerned; but what percentage was this of the company's enormous capital, even had there been no London manager and office? Can any original shareholder enlighten us as to the original expenditure—how much of the capital went to vendors and their names, how much to promoters and their names, and how much to any of the former directors, Messrs. Hall, Phillips, Phipson, and Rutter? We may congratulate ourselves on having latterly enjoyed the advantage of a Chairman of high standing, with whom all will sympathise in the arduous task he has had in the direction of so gigantic a white elephant as New Consols has hitherto proved. It is to be hoped that the appointment now made of a committee of local creditors and shareholders to supervise the management on the spot will relieve him of much anxiety and labour, and also that no further extravagant expenses will be incurred for the benefit of in-

dividual interests, where Capt. Pryor, if unhampered, could get the same work done at a fraction of the cost. It may be well, however, to caution the shareholders that the names of the committee include one which awakens unpleasant memories in connection with the disastrous mismanagement of the celebrated Terras Tin Mine.

The recent appointment of an engineer seems to be rightly condemned as an unnecessary extravagance. With a resident practical working manager and a resident chemist, it is puzzling to know what occasion there could possibly be for creating this additional office. An extra clerk might have been of more service to assist the manager in drawing up the detailed reports constantly forwarded to the London office; under the local committee, perhaps, this heavy correspondence may now be curtailed with advantage. I hoped to read in your report of the meeting on April 10 an announcement that the superfluous office of engineer had already been abolished. When all extravagant expenditure incurred independently of the managing agent at the mine has been refunded to New Consols by those who ordered or sanctioned it, then will be time enough to lay upon his shoulders the long delay that still defers the desired success. Meanwhile shareholders cannot do better than call at the works any day unexpectedly, and see for themselves how closely the whole of the operations are supervised under the direction of Capt. R. Pryor by his son, Capt. Joseph Pryor, F.G.S., and the other active resident agents.—*April 16.*

OUT ADVENTURER.

NEW CONSOLS MINE.

SIR.—I little thought when sending my contribution respecting this mine that so many rebukes would last week be administered to its chief representative, Capt. Pryor, otherwise I would have refrained from writing so strongly, as it is far from my forte to wish to inflict chagrin upon anyone, more especially when down and in trouble; still "Truth is stronger than fiction" and as it is "Never too late to mend," he can cull together the truisms so plainly given in the anecdotic denunciation to which the writer had at least the courage to attach his signature, and treat his numerous flagellations from anonymous scribbles with a wince, yet the stoic indifference which such literary productions generally merit. I notice amongst the shoal of bullyings and brow beatings that there are plenty ready with a remedy, and the anonymous voice seems to be unanimous in favour of concentrating the ores before being chemically treated, presumably because Mr. Warington Smyth suggests this as the antidote. Now, with all due respect I beg to materially differ even with this gentleman of undisputed talents and acknowledged renown, and will simply beckon to my aid the same old and only arguments I have ever used or ever intend to use—facts and figures.

We will take the treatment of 100 tons per day; and to quote from "A Shareholder," "the question of concentration is the turning point of the whole concern," but he goes on to say that either "by stamping or crushing and jigging 60 to 70 per cent. of the ore can be rejected." I at once readily admit that it would be far better to have only 40 instead of 100 tons pass through the process, if the contents of the 100 tons could be picked into the 40 tons, but it is an utter impossibility to accomplish this, and taking the New Consols ores as they really are, 1½ per cent. of copper, 3 ozs. of silver, 10 per cent. of arsenic, independent of sulphur and tin, I say from practical experience that the 40 tons will not contain more than 1½ per cent. of copper, showing a loss of over one-half of the whole of the copper contained in 100 tons, the balance being washed away, and remaining in the tailings. As for silver, the 40 tons will not increase 1 dw., but still give only 3 ozs. per ton—in fact, it is not uncommon to find the tails richer for silver than the heads. We have thus 40 instead of 100 tons of about the same quality for silver and copper, and it must be well remembered that the cost of mining, hauling to surface, and even stamping, crushing, and dressing the 100 tons has to be paid, whereas the 40 tons are hardly (to say the most) visibly enriched for silver and copper. I call this nothing more nor less than straining at a gnat and swallowing the camel, and am not surprised to find that Capt. Pryor has omitted to carry out instructions or orders to concentrate ores by washing or jigging for chemical treatment.

What I complain of is this—if the ores are not rich enough to be treated by the Nascent process, or if the process is too expensive to extract the silver and copper profitably, the representatives of the mine should manfully and honestly come forward and state the truth, unpalatable as it may be, and either stop the whole affair with its heavy costs and losses, or consult with me, the patentee of the process, to remedy the evil. I maintain that after the mineral is procured, and has gone through the expense of crushing, no dressing is required, and that the 100 tons can be operated upon at a less cost than it will take to jig, and then treat the balance of 60 tons by present appliances. It is not the matter of money—10,000 would be of no service without the correct method, but with it and able management a trifling amount only is required for a fortune to carve it.

Without any absurd egotism, I have made the art of chlorination a study for years by day and night, as after patenting the Nascent process, by which low-class ores can be treated for silver and copper under one operation, I soon found the missing link to a real success in the great cost of converting sulphides into chlorides, but having at last arrived at the great desideratum, enabling me for comparatively little outlay to treat 100 tons per day at a working cost entire of less than 10s. per ton, I am in a position to speak plainly, and am ready to find 5000 out of 2000, the amount required to put up the first instalment of the necessary plant at New Consols, to treat 20 tons per day, which can be increased to 100 tons *ad libitum* by additional capital, or out of profits that will immediately accrue under my management, upon the understanding that I shall have 10 per cent. of net profits up to 10000, and the honour of having brought the property from beggary to wealth.

I am in real earnest, and the readers of the *Journal* can watch the future career of the mine and its consequent failure under the concentration of ores as proposed by "A Shareholder," or witness its success under my economical salvation, alteration, and management, and if this is not open candour, with a desire to get nothing for nothing, or a moderate payment for services actually rendered, and honour to whom and only when honour is due, my name is not what it is.—*Bishopsgate, London, April 11.*

THOS. J. BARNARD.

NEW CONSOLS MINE.

SIR.—Confirming my letter of last week (too late for insertion) I have to inform your correspondent "R. J." of Manchester, that the Nascent Process, as used at New Consols, is essentially different from the wet method employed at the numerous chemical works scattered over the kingdom, inasmuch that (apart from minor details which were given in the patent specification, by-the-by costing 35s.) boiling brine instead of hot water is used to wash out the chlorides of silver and copper, enabling the two metals to be precipitated together in their then Nascent form by the aid of iron. I maintain that although only an improvement upon the well-known wet methods, there never was a greater novelty than making merchantable by concentration ores containing 1 per cent. copper and 3 ozs. silver to 60 per cent. copper and 150 ozs. silver per ton, and if "R. J." has really visited the kingdom's principal chemical works he must well know that the bulk of, if not all, the ores treated by them are Spanish pyrites of one uniform quality, and never less than 2 per cent. copper. I can also inform him that at the South Down Works, Plymouth, represented by the first chemists of the day, they essayed to treat English ores yielding 5 per cent. copper and 7 ozs. silver per ton from Hingston Mine, and after repeated experiments gave up the attempt as impracticable, pronouncing the ores to be too rebellious and complicated, and have ever since confined their operations to Spanish pyrites, yet at the same time they were in possession of a process, Claudet's, capable of securing silver from the Spanish ores, which never yield more than 1 oz. per ton. What reply has "R. J." to this? It is little enough 1 per cent. copper ore and 3 ozs. silver, and without the latter could be secured under one operation and at the same time, which is the secret of the Nascent Process, the low-class stuff at New Consols could not be made to pay. A novelty to be of any real value must be a commercial success. Science is one thing, and commerce and profit are another, and unless they could at least sometimes be made to blend together science certainly would not take very giant strides ahead; therefore, patent or no patent, the matter is hardly worth discussion, even to me the

least disinterested party, when so vital and important a subject is in hand as the acquiring of a real genuine success at New Consols or elsewhere "for the benefit of mining generally," and it is only the sterling compeers of the mining world who in the search for mineral wealth have emptied their own pockets and lost the money and confidence of their friends and patrons, who can appreciate and look yearningly and feelingly towards such a *dénouement*—the haven of rest, peace, and plenty.—*April 17.*

THOS. J. BARNARD.

NEW CONSOLS MINE.

SIR.—Last week's *Journal* contains a short letter from Captain Skewis, one of the numerous advisers of the New Consols Company, like myself. Whenever I offer gratuitous advice to anybody it is simply from an earnest desire to do good. A good motive influenced me to write what I have sent to your *Journal* regarding this mine. The retention of a board of London directors is a great evil to the company, on account of the expense. I do not know what salaries they receive, but if they receive no salaries the expenses of their journeys to and at the mine are, I am sure, considerable, and the expenses of Capt. Pryor's journeys to meet them in London must also be considerable. Abolish the board and the London office and secretary, and a great saving would be effected, to say nothing of the saving by getting rid of their mis-direction at the mine. The appointment of a local committee was a judicious measure, and that committee should act independently of any London control. The members of that committee are practical men, and are certain to do what is best for the company, being themselves interested in the success of the mine. As Capt. Skewis said, a good chemist is the chief requisite at the works; the engineer is a useless appendage. Perhaps a captain or two might be spared also, and Broadgate engine should not have been put to work. If the stuff treated admits of selection, by all means make a selection; indeed, do everything possible to retrench expenditure and enhance returns. I am glad to find that the petition to wind-up is dismissed, and that the men are to be paid. I have the greatest confidence in the mine, and shall be very glad to see its prosperity.

Calstock, April 17.

AN OBSERVANT MINER.

GORSSEDD AND MERLLYN MINE.

SIR.—In consequence of the extraordinary reports that have of late been so freely circulated with regard to the discovery of lead ore at the above mine I have made a thorough underground and surface inspection of the whole property, and I am pleased to be able to state that I can corroborate the statements that have been made from time to time by the manager and those agents who have inspected on behalf of shareholders. Looking upon the matter in a geological point of view, and considering the ore is found in a true fissure vein, I give it as my opinion that the discovery is by far the most valuable that has been made in the district for the past fifteen years. The ore was first met with some six months since in making a winze below the adit level (50 yards below surface), and as depth was gained so did the ore increase both in quantity and richness. At 12 yards levels were driven east and west on the lode, and the ore was found to continue in either direction equally rich with that in the winze. A second winze (No. 2) was then commenced further west in the same level as the first, and almost immediately struck the ore, with the same satisfactory results as had attained the first essay. The lode was at this point again driven east and west, and proved itself as before almost uniform in either direction; thus the lode has been proved for upwards of 50 yards in length, with both ends showing as rich as any part worked on, so that the wealth already found is probably only an index of what may turn out to be, as has been the case in other mines in the neighbourhood, almost inexhaustible.

While the above operations were being carried on a large engine-shaft was sunk from surface (eastward of these workings) to the adit level, and thence to a further depth of 20 yards, at which point the lode, which underlies north, was again intersected with similar satisfactory results, thus conclusively proving that there are immense reserves to be dealt with which will be a source of profit for a long time to come. The lode throughout at the lowest computation will average 4 tons of lead per fathom, which is equivalent to a money value of 6000, and as the ground can be taken away at a total cost of 50 per fathom the profits are easily calculated. The present return of lead is 50 tons per month, realising about 7500 at a cost of about 2500, leaving a profit of 5000 per month. Taking into consideration the general appearances, and the energetic manner in which the mine is being developed, there can be little doubt that within another six months these returns will be doubled. I am informed the mine will pay its first dividend in June next.

Coleman-street, London, April 20.

A. W. THOMAS.

PNEUMATIC CONCENTRATOR.

SIR.—May I ask the favour of an opportunity to amend "Expectant's" announcement, in last week's *Journal*, that a pneumatic concentrator will shortly be shown in operation at Messrs. Dillwyn and Co.'s. The arrangement is with Messrs. Richardson and Co., Copper Ore Wharves, Swansea.

B. W. HART.

Walbrook, April 20.

THE WILD DUCK, OR SPORTSMAN'S ARMS.

"Now Comrades," says uncle Henry Teylor, "we are all met again safe and sound, and I hope Jimmy Dowa have made up a good speech, for he had plenty of time to think over." "Iss," says Jimmy, "but you forget men that I have been travelling, and that an I speech making don't go together." "Well then," says Jan Temby, "lev us have some account of your travels, for I expect you seed a fine lot of curiosities." "I tell ee," says Jimmy, "that I went through St. Agnes, Perran, along the North Coast to Newquay, Lower St. Columb, Mawgan, &c., and if I did not see any curiosities, I seed lots of fine lodes of copper, tin, lead, mangle, iron, &c., and if it was to save my life men I can't make out the roquary or foolery of people spending millions of money for the good of furriers, when the can honestly make fortin's at home. On, but some will say our 'old deep bals' can never face the furrin tin, and if there is not a better price the must be knacked. Well knack away, for that wasn't bring the end of the world, or the end of the bals, for while we have scores of miles of all sorts of lodes whole to grass, and never touched, I say the man is a fool who will tell the people that our bals are not able to face iss, and beat too all the furriers in the world. Now, look here men, in the parishes I have travelled through from St. Agnes to Mawgan you may find new bals enuff, and good ones, to employ all the miners in Cornwall, so people have no business to be losing money in old deep mines, and pretending to make profits, and speaking out every day that we can't face the furrin tin, when a heap of money can be made by working new shallow bals." "I don't know comrades," says Jan Jewell, "what may be your opinion, but I think Jimmy Dowa made a very decent speech, but I want to know with all the great managers and captains we've got, and all the larned societies and they there sort of things, whether the old deep mines, with the present price and all the furrin tin, with a new system of management and dressing, could not be made to pay well?" "Now that's obin," says Old Tom, "for I tell ee men until you have a plan of dressing that will stop the tin, and copper and lead too, from washing into the sea no old deep mine, and many shallow ones, will ever pay; and let me tell ee what I seed in a bal not long ago. I was going on, and seeing some boys very busy I stopped to see what the wor doing, well the wor washing hutch-work (copper) in a strake, there was a deep cover and catch-pit at the end, the water going from the strake was thick and muddy, so I got a basin and spoon and skem'd up some muddy water from the cover and catch-pit till I filled the basin. Now I tell ee men you would never believe what was swammen away in that muddy water, and wor never seen again in this world. Well, after the muddy water settled in the basin I had ore enough there for two samples; a friend had them tried for me, and the each made 17½ produce. Now hark, the hutch-work made a produce of 7s., so what was swammen away and never seen again was 10½ produce richer

THAMES BOAT-HOUSE COMPANY (Limited).—Capital 2000*l.*, in 1*l.* shares of 20*l.* each.
To erect a boat and club house for the Thames Rowing Club. The subscribers
—James Hastie, Sunnyside, Putney, 35; J. Howell, jun., 2, Easton Villas, Putney.

March 8: Underground we are opening out in the 10 north and south, in the new east (Virgin), which you very properly designate a branch: we have ore going down, which will be followed towards the 20, where we are well situated to prove it at a lower level in due time. We have out the footwall—I cannot say of the lode, although it may be—in the Tiritó shaft. This is the same wall we have followed from the Tunnel level, north of the north slide, but in the Tunnel the new east (Virgin) branch is to the east of it. This wall, on getting to the west side of

children.

FOREIGN MINING AND METALLURGY.

The French iron trade has presented little change during the past week, and there is little news to communicate with respect to it. Hopes are entertained in some quarters in connection with the proposed renewal of treaties of commerce that the import duties imposed on iron will not exceed 5 per cent., but these hopes do not appear to rest on any reliable basis. At Paris the iron trade has been tolerably firmly sustained with regular sale. In the Nord prices are fluctuating between 64, 12s. and 64, 16s. per ton. In the Haute-Marne the quotation is maintained with some firmness at 64, 16s. per ton. In the Meurthe-et-Moselle pig remains at the low quotation of 24, 8s. 10d. An order for 18,000 tons of steel rails has been given out by the Eastern of France Railway Company; the contract price has not been transpired. The Commeny and Fourchambault Company announces a dividend of 2l. per share for 1875-6.

The Administration of the Belgian State Railways has invited tenders for the supply of 62,500 tons of coal to meet the consumption requirements of that system. The result of this competition may be expected to define prices for a time. The working coal miners began to complain of the reductions which are almost everywhere imposed upon them in Belgium; this week the miners of the Roubier C. liery, at Châtelet, have refused to go down into the pit, but their strike has not occasioned any trouble in the district. M. Sabure, the managing director of the Bayemont Collieries, has just ordered for those collieries an extraction engine of 1000-horse power. The order has been given to M. Hanrez, machinist, of Marchienne-au-Pont.

There has been very little passing in copper at Paris. Good ordinary Chilean in bars has made 77l. per ton; ditto ordinary descriptions, 74l. per ton; ditto in ingots, 78l. per ton; English best selected, 79l. per ton; and pure Corocoro minerals, 76l. per ton. In Germany transactions in copper have been very restricted, and prices have not sensibly varied. Tin has continued very quiet upon the Dutch markets; disposable is held at comparatively high rates; but, on the other hand, purchases are only made to meet the most urgent requirements of consumption. Banca is held at 42½ fl., and argente Billiton at 42 fl. to 42½ fl.; ditto, with delivery in May and June, at 41½ fl. A sale of Billiton, which has just taken place at Batavia, comprised 10,000 piculs; transactions were effected at an average of rather less than 46½ fl. per picul. Upon the Paris tin market Banca has made 77l. per ton; Billiton, 76l. per ton; Straits, 77l. per ton; Australian, 76l. per ton; and English, 76l. per ton. The German tin market has been generally weak, although prices have scarcely varied. The Paris lead market has been well supported at 21l. for lead from all sources. The German lead markets have been characterised by an attitude of expectation, but events appear likely, upon the whole, to involve an important advance in prices. Silesian zinc has brought 21l. 16s. per ton at Paris. The German zinc markets have not presented any material variation, but the tendency of prices appears to be rather downwards.

Although prices remain at a very low level in the Belgian iron trade, the markets exhibit a less heavy tendency. Rather more business has been done this week, especially in T-iron and merchants' iron, but some time must elapse before each establishment can have its production fully engaged, and there is no immediate prospect of any revival in quotations. Contingent efforts are being made to reduce wages; sometimes these efforts are successful, but sometimes the reductions proposed are not accepted. A strike, for instance, has occurred at the Zone Works at Marchienne-au-Pont, where nearly 300 workmen have abandoned their work, declining to accept a reduction of 5 per cent. on their wages. It is not expected, however, that this strike will be of long continuance. A French consular commission, charged with the task of investigating questions affecting the French iron and other trades, has come to the conclusion that it is desirable to maintain the *status quo* as regards duties imposed on iron entering France. There is thus no immediate prospect of Belgian iron being admitted into France free of duty. The John Cockerill Company has secured a contract for the construction of a gasometer for the Brussels Gas Company; the contract price is 78,000l.

The week has presented little of interest in the French coal trade; very few new transactions of importance have been announced, and the winter season is being finally disposed of with very low prices prevailing. It seems very doubtful whether the approaching summer will bring with it any improvement in affairs. A few orders have been received at the pits from the sugar manufacturers, but these orders have been of no great extent or importance, and have not satisfied anyone. As regards the basin of the Loire, in which the coal trade has been rather better supported than in the Nord or the Pas-de-Calais, there is little fresh to report this week. A pamphlet has appeared under the title of the "Coal Crisis in France;" it is from the pen of M. Boutarel, who sees no remedy for the present depression except an increase in the duties imposed on foreign coal entering France. Contracts are about to be let at Paris for the supply of 17,000 tons of coal annually for three years, for the administration of public assistance in that capital.

MIXING CONCRETE.—The machine for this purpose invented by Mr. W. W. WILSON, of Dublin, consists of a kind of endless chain of buckets fitted to overlap one another, so as to form a continuous joint, through which travels in a horizontal direction, and receives the material from separate hoppers provided with adjustable gauges to regulate the quantity of material delivered. Mixers or blades work in the trough to mix the materials to a certain extent before they are passed into the mixing machine. The buckets have only a bottom and two sides, which overlap those of the succeeding buckets, so as to form a continuous trough, as above mentioned. They are attached to endless chains passing round chain wheels or drums on horizontal shaft, to one of which power is applied to drive the endless trough. The latter travels beneath two or more hoppers in succession, which open at bottom into the trough, and contain the one (say) sand or ballast, and the other cement. The trough may first receive the sand or ballast, which fills it to a certain height (regulated by an adjustable gauge roller mounted next to the hopper), and then the cement which further fills the trough to a height regulated by an adjustable scraper or plate. As the trough travels onwards with its charge the latter meets a pair of blades working rapidly to and fro across, near the bottom of the trough, which undercut the face of the materials and cause the cement to fall down over the face of the ballast, thereby mixing the materials considerably before they are delivered by the trough to the mixing machine. The mixing blades are driven by crank and spur gear from the shaft of one of the chain drums.

PORTABLE ELECTRIC LIGHT.—An ingenious little electric light apparatus has been invented by Mr. FACIO, of Paris, and is applicable to watches, walking sticks, and such like. The watch, for instance, to which it is applied is united by a chain to a link bar, which may be placed in a button hole, another chain communicates with a pile which may be carried in the waistcoat pocket; to the link bar another chain is attached in communication with a receptacle or box containing wick, and a "Geissler" tube, which will transmit the spark produced by the electricity. Thus the time can be easily seen in the dark. The apparatus is composed of other conducting chains coming from the pile, and of a receiver which may be perfectly independent, the receiver being provided with a wick or bobbin, and the receiver may be made like a locket or other article if desired; communication between pile and locket or other article may be produced by means of a button or other suitable appliance placed in any convenient position. The chains may be formed or composed of two wires and surrounded by insulating material, which latter may be covered with some precious metal or other material as fancy or taste may dictate. The lighting material may be carried by the watch itself, or the light generating apparatus may be provided with a case to hold the watch or other object to be lighted up in such manner that the glass which covers the afore-said case will receive the action of the lighting tube containing the "Geissler" tube, and the case itself will be independent of the object to be lighted.

THE "CRANSTON" ROCK DRILL

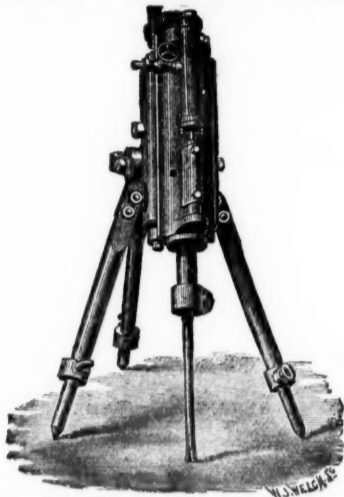
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NEWCASTLE-ON-TYNE.**

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of the SIMPLEST and BEST CONSTRUCTION.

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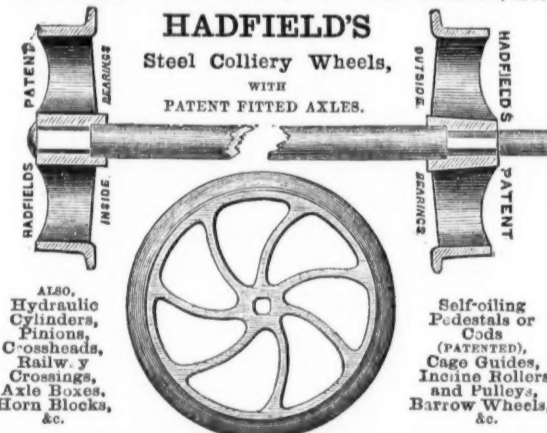
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Giving most excellent results.

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Are NOW PREPARED to SUPPLY their DRILLS, the ONLY ONES that have been SUCCESSFULLY WORKED in the MINES of CORNWALL. At DOLCOATH MINE, in the HARDEST known ROCK, a SINGLE MACHINE has, since its introduction in July, 1873, driven MORE THAN THREE TIMES the SPEED of HAND LABOUR, and at TWENTY PER CENT. LESS COST PER FATHOM.

In ordinary ends two machines may be worked together, and at a proportionately increased speed. They are strong, light, and simple, easily worked, and adapted for ends and stops, and the sinking of winzes and shafts.

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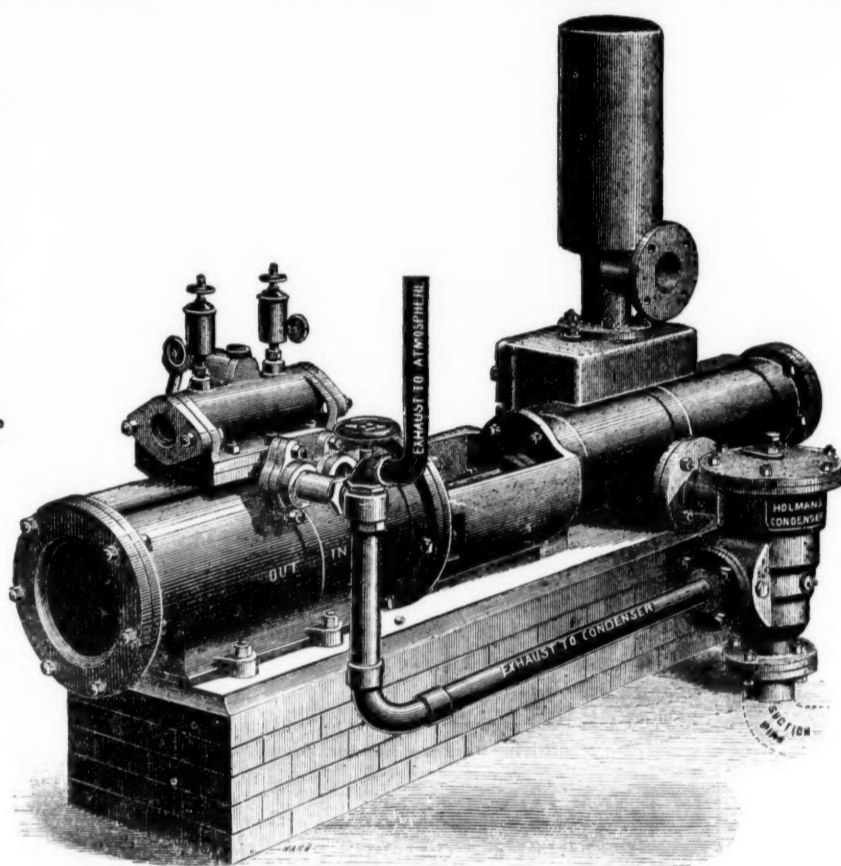
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Holman's Condenser

TURNS WASTE STEAM INTO
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WILLIAM ELLIOT, Esq., of the Weardale Iron and Coal Company, writes under date Sept. 17th, 1875, as follows:—"We have now THIRTY-FIVE of your SPECIAL STEAM PUMPS in operation at the various collieries under my charge—some of them employed pumping water out of our pits to the depth of 50 fms.—others employed in the pits, and a good many feeding Boilers. I have no hesitation in saying that we have found them the Cheapest and Best Pumps of the kind we have tried. I can with confidence recommend them to intending purchasers."

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In Mining operations these Condensers will be of great value.

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The following sizes are suitable for low and medium lifts:—

Diameter of Steam Cylinder ...In.	3	4	4	4	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	10	10			
Diameter of Water Cylinder ...In.	1½	2	3	4	3	4	5	3	4	5	6	3	4	5	6	7	4	5	6	7	8	5	6	7	8	9	5	6			
Length of StrokeIn.	9	9	9	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	18	12	12	12	18	24	12	12			
Gallons per hour	680	815	1830	3250	1830	3250	5070	1830	3250	5070	7330	1830	3250	5070	7330	9750	3250	5070	7330	9750	13,000	5070	7330	9750	13,000	16,500	5070	7330			
Price of Special Pump ...£	18	18	20	25	22	10	32	10	25	30	35	40	30	35	40	45	50	40	45	50	55	65	50	55	60	70	85	55	60		
Extra, if fitted with Holman's Condenser and Blow-through Valve	£7	£7	£9	£11	£8	10	£11	10s	£12	10s	£9	£12	£15	£15	£10	£13	£15	£16	£22	£13	£16	£16	£22	£22	£16	£16	£23	£24	£35	£17	£17

CONTINUED.

Diameter of Steam Cylinder..In.	10	10	10	10	12	12	12	12	12	12	14	14	14	14	14	14	16	16	16	16	16	18	18	18	18
Diameter of Water Cylinder..In	7	8	9	10	6	7	8	9	10	12	7	8	9	10	12	14	8	9	10	12	14	9	10	12	14
Length of StrokeIn	12	18	24	24	18	18	18	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Gallons per hour	9750	13,000	16,519	20,000	7330	9750	13,000	16,519	20,000	30,000	9750	13,000	16,519	20,000	30,000	40,000	13,000	16,519	20,000	30,000	40,000	16,519	20,000	30,000	40,000
Price of Special Pump..£	65	75	90	100	75	80	85	110	120	140	110	120	130	140	160	180	140	150	160	180	200	180	190	210	230
Extra, if fitted with Holman's Condenser and Blow-through Valve	£23	£24	£35	£35	£20	£27	£27	£38	£38	£50	£28	£28	£40	£40	£55	£55	£28	£40	£40	£55	£55	£45	£45	£55	£60

Intending purchasers of Steam Pumps would do well to observe the great length of stroke, short steam cylinder, and short piston of the "Special" Steam Pump, as compared with the short stroke, long steam cylinder, and long piston of the Pumps of other makers, as the efficiency and durability of the machine, and the space occupied by same, greatly depend upon this. The advantage of long strokes will be obvious when purchasers are reminded that each set of suction and delivery valves of a "Special" Steam Pump with 24 in. stroke, running at 120 ft. per minute, would open and close only 30 times per minute, as against 120 times per minute in a Pump with only 6 in. stroke performing same duty.

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ings. The perfect manner in which this important result is accomplished by your Condenser is extremely creditable to you, and merits the thanks and commendation of the Mining Engineer. When we start the "Special" Steam Pump the Condenser commences working automatically, and maintains a constant vacuum of 10½ lbs. per square inch, even when we run the Pump upwards of 80 strokes (106 feet) per minute. It may perhaps be interesting to you to know that when we were running the Pump at 84 strokes (168 feet) per minute, the steam gauge

indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump, and the Condenser vacuum gauge on the exhaust pipe indicating a steady vacuum of 21½ inches, I turned the exhaust steam from the Condenser into the atmosphere, when the speed at once fell to 44 strokes per minute. The working economy thus shown is really so great that the cost of the Condenser must be saved in a very short time.

(Signed)

J. THOMPSON.

NORTH OF ENGLAND HOUSE
SOUTH WALES HOUSE...TANGYE BROTHERS AND RAKE, ST. NICHOLAS BUILDINGS, NEWCASTLE-ON-TYNE.
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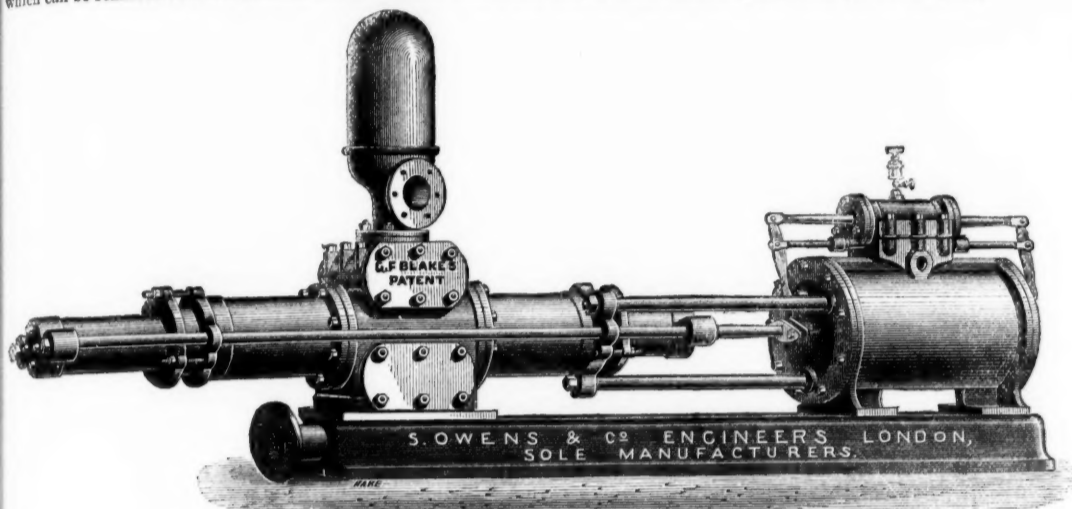
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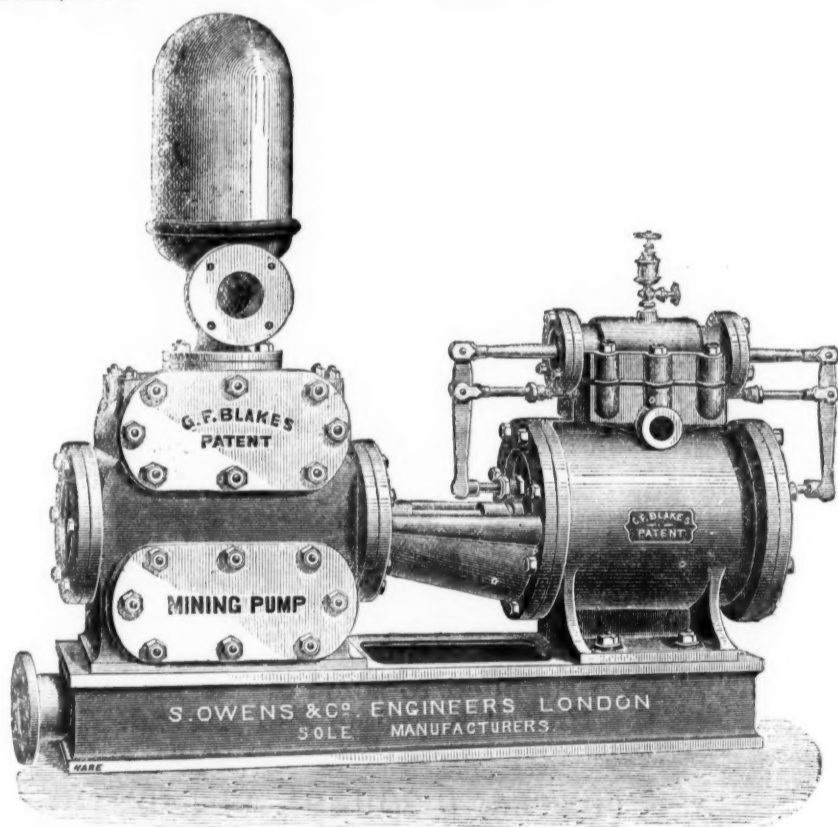
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These PUMPS from their SIMPLICITY, RELIABILITY, DURABILITY, and ECONOMY are SPECIALLY SUITED FOR MINING PURPOSES, where large quantities of water require to be raised from great or medium depths with CERTAINTY. They are double-action in their construction, throwing a constant stream of water, can be made of any stroke to suit the space in which they have to work, can be arranged with any combination of steam and water cylinders to suit the pressure and lift against which it is desired to work them, are made of the very best materials and highest class of workmanship, and all working parts can be readily got at by any ordinary workman, and replaced if necessary by a duplicate part (all such being interchangeable) in the shortest possible time. For situations where gritty and sandy water has to be pumped the DOUBLE-PLUNGER PATTERN is recommended. Where space is limited the PISTON PUMP is better suited, a novel feature of which is the PATENT REMOVEABLE LINING, which can be removed in a few minutes and substituted with a new one, without disturbing any other part of the pump.



Blake's Improved Double-plunger Steam Pump.
S. OWENS AND CO.,

In placing the BLAKE STEAM PUMP before the mining world, believe they are offering the BEST, MOST RELIABLE, and ECONOMICAL PUMP that has yet been made, and solicit an inspection of various sizes in operation at their works, Whitefriars-street, Fleet-street, London.



Blake's Improved Mining Pump, with Patent Removeable Lining to Pump Cylinder,

Any combination of these Pumps may be had to suit circumstances. The following are some of the sizes SUITABLE FOR MINING PURPOSES:—

Di. of steam cylinders.. In.	12	12	12	12	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	24	24
Di. of water cylinders.. In.	3	4	5	6	4	5	6	4	5	6	8	4	5	6	8	5	7	8	9	6	8
Length of stroke... In.	18	18	18	24	24	24	24	24	24	24	24	30	30	30	30	30	36	36	36	42	42
No. of strokes per minute..	30	30	30	30	25	25	25	22	22	22	22	22	22	22	22	20	20	17	17	15	15
Quantity in gallons per hour, approximately ...	1440	2610	4200	5940	2940	4620	6600	2646	4158	5940	10620	2646	5160	7500	13260	4585	9000	12360	15660	6720	12000

PRICES FOR THE ABOVE, OR ANY SPECIAL SIZE, AND ILLUSTRATED CATALOGUES FURNISHED ON APPLICATION

PATENT CONDENSERS

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PATENT

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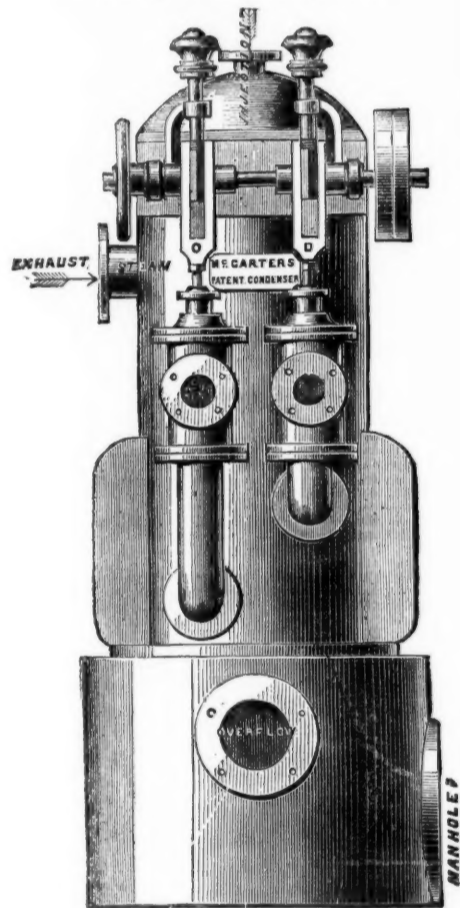
- "2. Its simple construction ensures durability, &c.
- "4.—The steam or air cushions at each end of cylinder effectually protect from injury.
- "5. Its having an automatic feed, giving it a steady motion, &c.
- "6. Its greater steadiness and absence of jar and vibration experienced in other drills, which is very destructive to their working parts, &c.
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BLAKE'S NEW PATENT STONE BREAKER.

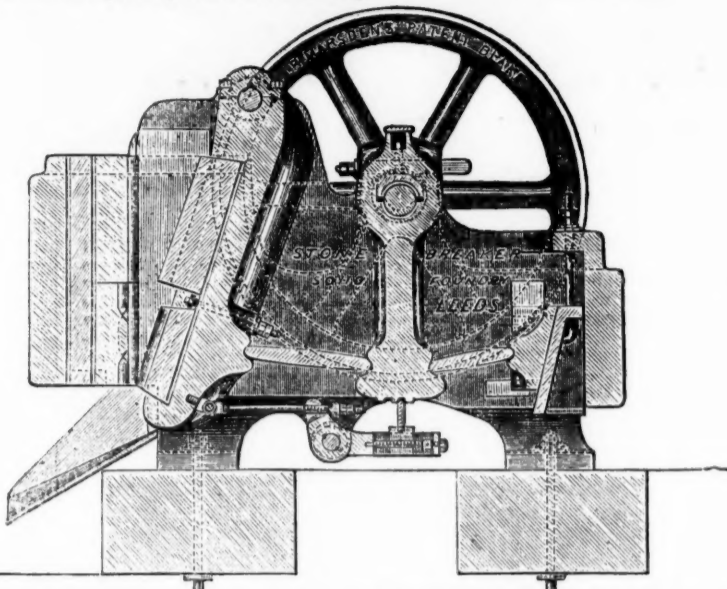
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Santiago, 1869.
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Leicester, 1868.
Cardiff, 1872.
Bolton, 1872.
Ayr, 1873-4-5-6, &c.

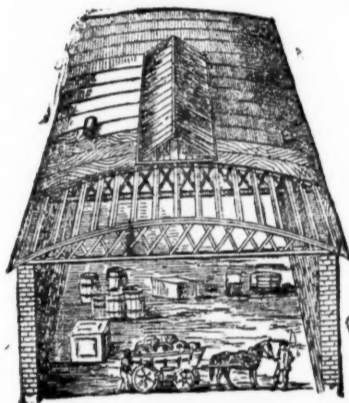
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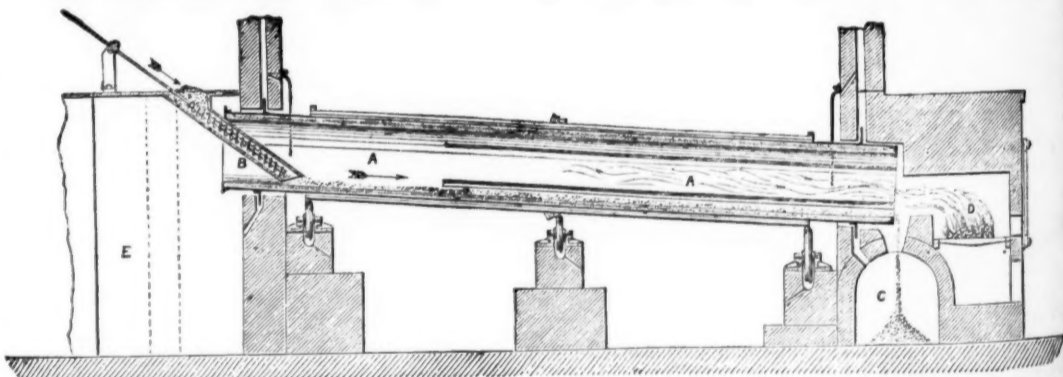
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